THE CHEMIST AND DRUGGIST

June 25, 1960

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No. 4193

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BRETTENHAM HOUSE, LANCASTER PLACE, LONDON W.C.2

The CHEMIST AND DRUGGIST

Volume 173 JUNE 25, 1960 No. 4193

A Corporation to run N.H.S.?

B.M.A. PRESIDENT'S PROPOSAL AT TORQUAY

IN his presidential address to the British Medical Association on June 20, Sir Arthur Porrit (Sergeant-Surgeon to the Queen) suggested that the National Health Service should be administered by an independent corporation instead of by the Ministry of Health.

His proposal implied the disbursement and application of public monies by an independent body without the intervention of departmental machinery and without the need for a Minister to be answerable to Parliament for the day-to-day conduct of a service. Sir Arthur suggested that if doctors were given an equal partnership in the corporation there would be a more flexible policy in keeping with the human objects and ideals of medicine. "Even more important, it would lift medicine out of the realm of party politics, an influence which has bedevilled the National Health Service."

Sir Arthur said that the conception of the Health Service involved an equal partnership between Government and doctor, but the partnership had been slowly displaced by the employer-employee relationship. There had been unproductive discussions between the medical profession and the civil service administrators. "The departmental mind is restrictive and festooned with regulations. Medicine needs a creative mind."

Earlier in the day the representatives of the Association agreed that the coercion of the public into buying medicaments either by the use of highly secretive or scientific sounding names for certain ingredients was deplorable.

Consignment Notes

CHANGES FOR INTER-EUROPEAN TRAFFIC

A NEW form of international consignment note for traffic conveyed by rail/sea services between Great Britain and Europe is being brought into use on and from July 1. The present form of consignment note (Appendix II CIM and BR. 20105/1 and 20105/2) will cease to be valid after June 30 and must not be used after that date. The new composite document consists of five sheets numbered as follows:—(1) consignment note (original contract of carriage which is to be handed to the consignee with the goods on delivery); (2) invoice (document for railway use only); (3) arrival note (document which accompanies the consignment up to destination station and which, after signature by consignee as to receipt of goods, is retained by the destination railway); (4) duplicate of the consignment note (to be handed to the sender after acceptance of the consignment); (5) duplicate invoice (document for railway use only).

Pesticides

DRAFT COMMON NAMES

COMMENTS on the following suggested names for pesticides are sought by the British Standards Institution. They should be addressed to Mrs. B. Joyce, B.S., 2 Park Street, London, W.1, before July 22.

Proposed Common Name	Chemical Name
dinocap ..	2-(1-methyl-*n*-heptyl)-4,6-dinitrophenyl crotonate
eprazine ..	2-(chloro-4-isopropylamino-6-ethylamino-1,3,5-triazine
menazon ..	*S*-(4,6-diamino-1,3,5-triazin-2-yl)-methyl *OO*-dimethyl diphosphorothiolothionate
phenchlorphos	*OO*-dimethyl *O*-2,4,5-trichlorophenyl thiophosphate
pretoxine ..	2-methoxy-4-isopropylamino-6-ethylamino-1,3,5-triazine
prodizine ..	2-chloro-4-diethylamino-6-isopropylamino-1,3,5-triazine
sidizine ..	2-chloro-4,6-bisdiethylamino-1,3,5-triazine
simoxine ..	2-methoxy-4,6-bisethylamino-1,3,5-triazine
siprazine ..	2-chloro-4,6-bisisopropylamino-1,3,5-triazine
siproxine ..	2-methyoxy-4,6-bisisopropylamino-1,3,5-triazine
trietazine ..	2-chloro-4-diethylamino-6-ethylamino-1,3,5-triazine

B.N.F.

FIRST AMENDMENT 1960

THE following amendments and corrections to the two editions of the British National Formulary 1960 have been published as the First Amendment 1960:—

The formula for hydrocortisone and neomycin ear-drops was, at the time of publication, identical with that of two proprietary preparations. One, Hydromycin ear-drops, which was supplied in packs containing 3 mils, has recently been replaced by Hydromycin D ear-drops containing prednisolone instead of hydrocortisone acetate. The other preparation, Neo-Cortef ear-drops, is supplied in packs of 5 mils.

The two editions of the formulary are, therefore, amended as follows:—

STANDARD EDITION

p. 74. **Aurist. Hydrocort. et Neomyc.** Amend the quantity to be dispensed unless otherwise directed from "3 ml." to "5 ml."

p. 7. **Additions.** Amend "Hydromycin ear-drops" to "Neo-Cortef ear-drops."

p. 214. **Proprietary Preparations.** Delete reference to Hydromycin ear-drops.

ALTERNATIVE EDITION

p. 174. **Hydrocortisone and Neomycin Ear-drops.** Amend [3 ml.] to [5 ml.].

p. 8. **Additions.** Delete "Hydromycin ear-drops."

p. 240. **Proprietary Preparations.** Delete reference to Hydromycin ear-drops.

CORRECTIONS

STANDARD EDITION

p. 9. **Amendments to Composition.** Add "Elix. Chloral. pro Inf."

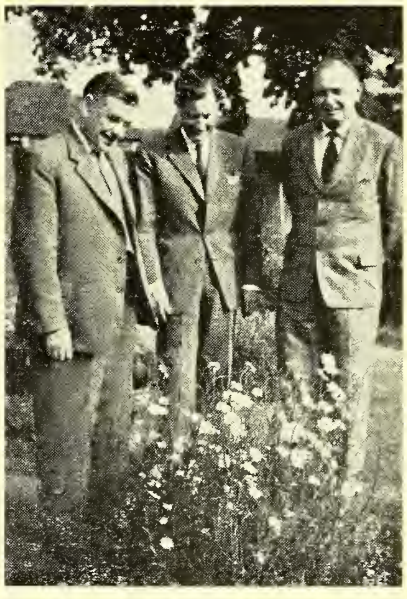
p. 84. **Crem. Calam.**

	(Approximate Percentage)
Amend "Water ....465 gr.	49"
to "Water ..to 960 gr.	to 100"

p. 148. **Tab. Acetazolam.** Add "B.P." to English title.

p. 221. Amend "Sinacthar" to "Sinaxar."

p. 220 and p. 228. Amend "Raspenyl" to "Respenyl."



PYRETHRUM AT KEW: During a recent business trip to England Dr. H. Pell-Smith (right), chairman of the Pyrethrum Board of Kenya, visited Kew Gardens, London, where research is being carried out into the horticultural uses of pyrethrum. Seen with Dr. Pell-Smith are Dr. George Taylor (director, Royal Botanic Gardens) (left) and Dr. T. F. West (European operations executive of the Pyrethrum Board).

LEGAL REPORTS

Injunction Granted

IN the Chancery Division of the High Court, London, on June 17, Mr. Justice Pennycuick granted to Johnson & Johnson (Gt. Britain), Ltd., Slough, Bucks, an interlocutory injunction restraining Monty Hodis and Mordecai Slowman, trading as Byrite Stores, Hoxton Street, London, N.1, from re-selling plaintiff's goods which had been sold subject to a condition that they should not be re-sold except at a specified price. Mr. Joseph Dean said that, in the interests of retailers, the company maintained fixed prices. The defendants had been under-cutting the price of Johnson's baby powder. Solicitors had written stating that the defendants were prepared to submit to an injunction and pay a certain sum of costs. Apparently the defendants were no longer in business. The business had been sold to pay trade creditors. The judge said he would make an order for costs.

Blackmailed

CONDITIONALLY discharged for a year at Marlborough Street court for stealing a total of 112 Drinamyl tablets from her employers, Mrs. Barbara Jean Wassink, Homefield, London Road, Morden, Surrey, dispenser at the King's Road, Chelsea, branch of Boots, Ltd., claimed that she had supplied the tablets without prescription to a man named Arthur who first pleaded with her and then threatened her. She had said Arthur called at the chemist's shop and persuaded her to give him 25 tablets, pleading that he badly needed them. Subsequently he called again and telephoned and she gave him more tablets on three occasions after threats that he would tell her employers and get her into trouble. In a statement she said, "I knew it was wrong, but he always threatened. He became so persistent that it was the only way I could get rid of him." The officer added that the accused had been regarded as an exemplary dispenser, but now she would be dismissed from her post. The magistrate, told Mrs. Wassink, "It does seem that this man blackmailed you, but that doesn't account for the first time you gave him drugs. Because of the high standards required in your profession, I fear you will suffer heavily for this."

COMPANY NEWS

Previous year's figures in parentheses

REXALL DRUG AND CHEMICAL CO., Los Angeles, U.S.A.—Net earnings in 1959 were $8·75 millions (against $6·30 millions)—an increase of 38·8 per cent. Net sales were $227 millions ($182 millions). Current assets totalled $89·3 millions and liabilities $33·8 millions. Total assets were $135·8 millions ($119·7 millions). The report states that production of fine chemicals is concentrated at present at two works—one in England, the other in the U.S. Approximately 60 per cent. of production from the English factory is exported through manufacturer's representatives in foreign countries.

FARBWERKE HOECHST, A.G. — Turnover increased by 17·6 per cent. in 1959 to D.M. 2,222 millions. In their report, the directors say that 1959 was a successful year for the West German chemical industry, the industry's turnover going up by 13·7 per cent. over 1958. The company's turnover in pharmaceutical products was once again raised during the year, the major share being taken by the oral anti-diabetic drugs. The products of Behringwerke A.G. registered an encouraging increase in turnover. The demand for inorganic chemicals rose so steeply during the year that in the case of a number of widely used products there were at times delivery difficulties.

SMITH & NEPHEW ASSOCIATED COMPANIES, LTD.—In a quarterly report to shareholders, the directors state that sales for the first twelve weeks of 1960 show an increase of 9 per cent. over 1959, while the group net profit, before tax, is up at £514,000 (£470,000). The directors warn, however, that it is unlikely that the rate of increase over 1959 will be maintained in the current year. For though, in the first twelve weeks of 1959, both sales and profits were well below normal owing to some hesitancy in buying in anticipation of purchase tax reductions, they were recovered in the second quarter. The company is being faced with higher costs mainly due to wage increases which have recently been agreed.

SANITAS TRUST, LTD. — In his review accompanying the 1959-60 accounts, Mr. C. Sweeny (chairman) mentioned the various steps being taken to improve the present sales potential of existing products. The board believe that the most obvious fields for expansion will come from disinfectant, antiseptic, and pharmaceutical products, which the company may develop itself or which it may acquire by the purchase of new products or companies. The board does not intend to invest the company's resources, however, except on what they consider a reasonable investment basis. Liquid resources are shown in the group balance sheet as at March 31 last at £1,815,299 (£1,608,938 a year earlier). Sales in overseas markets continue to improve and again show an increase over the like period in the previous year. Export turnover accounts for some 40 per cent. of total sales.

BOOTS PURE DRUG CO., LTD.—Mr. J. P. Savage (chairman) is retiring on March 31, 1961, the last day of the company's financial year. He will be succeeded by Mr. Willoughby R. Norman as chairman of the board and head of the company, and by Mr. F. A. Cockfield as managing director and chairman of the executive management committee. Mr. K. D. Williamson will be appointed deputy managing director (see also p. 750). Group sales valued at £90·5 millions for the year ending March 31, are announced in a statement circulated to shareholders. That represents an increase of 8 per cent. over the previous year. "Our experience in the last twelve months," states Mr. J. P. Savage, "can be summed up quite simply by saying that we have achieved a sales increase of £6¾ millions without any increase in staff. The most gratifying improvement has been in the reduction in retail payroll percentage despite an increase in salary rates." As prevously published (*C. & D.*, May 14, p. 532), profits before tax amounted to £7,560,697 (£4,997,839). Although budgeting for increased profits in the current year, Mr. Savage adds a warning that it was on a much more modest scale than for last year, when the figures were affected by the complete replanning of a number of activities. In the pattern of the company's export business over the past few years, bulk chemicals had declined but that loss had more than been made good by improved sales of branded medical, pharmaceutical and veterinary specialities. Sales by associated overseas companies amounted to well over £2·5 millions.

CIBA, LTD., Basle, Switzerland.—In 1959 total sales amounted to Sw. frs. 1,026 millions or 12 per cent. more than in 1958. Net profits for the year rose by Sw. frs. 2,949,401 (£245,780) to a new level of Sw. frs. 27,261,219 (£2,271,780). Out of that it was decided to allot Sw. frs. 7,700,000 (£641,666) to certain welfare and research funds, and to distribute Sw. frs. 18 million (£1·5 million) as dividends; the surplus of Sw. frs. 2,041,079 (£170,089) to be carried forward.

Dr. R. Käppeli (chairman) in his annual report which discusses the activities of the associated companies mentions that further expansion of business was achieved by CIBA Laboratories, Ltd., Horsham, and productivity continued to grow steadily due to increased mechanisation and improved production methods. In discussing another British associate (CIBA (A.R.L.), Ltd.), he states that the company's export business had been hampered by the high prices of some of its British-made raw materials. For instance, methanol made in Britain was more expensive than methanol imported from the United States or Germany, although the imported material had to pay a duty of 33·3 per cent. Application for removal of the duty was now under consideration by the Board of Trade. Such reduction in duty was particularly pressing because there was paradoxically little or no duty on the imported finished plastics products made by foreign competitors with access to raw materials at world prices.

BUSINESS CHANGES

A. WANDER, LTD., have transferred their order department to the factory at King's Langley, Herts (telephone: King's Langley 3221).

MR. A. H. WILLIAMS, M.P.S., has acquired the pharmacy of Mr. W. R. Austin, M.P.S., 159 St. Marychurch Road, Plainmoor, Torquay, taking over on June 27. Mr. William's pharmacy at 80 Forest Road, Torquay, has been closed.

Appointments

FISONS HORTICULTURE, LTD., have appointed Mr. F. J. Heath (general manager) to fill the newly created position of managing director; Mr. K. J. S. Vasey (now deputy general manager) becomes general manager.

NEWS IN BRIEF

THE official index of retail prices at May 17 (January 17, 1956, taken as 100) was the same as at April 12, 110·3.

THE National Hospital, Queen Square, London, W.C.1, the only university post-graduate teaching hospital specialising in neurology and neurosurgery, celebrated its centenary, June 20-24, with a series of lectures and scientific and film demonstrations.

THE Home Secretary has restored to William David Thompson, M.B., Ch.B., the authorities accorded by Regulations made under the Dangerous Drugs Act, 1951, that were withdrawn from him in 1956 (see *C. & D.*, December 8, 1956, p. 617).

BY a large majority, doctors attending the annual meeting of the British Medical Association at Torquay on June 17 agreed that the British Medical Association Council should continue to press for the supply of drugs for private patients through the National Health Service.

THE councils of the Institution of the Rubber Industry and the Plastics Institute have set up a liaison committee consisting of five representatives of each body to consider and report back on the advantages and disadvantages of closer co-operation and the practicability of amalgamation.

SOME of the details relating to forensic pharmacy in ten countries published in the *International Digest of Health Legislation* (*C. & D.*, May 7, p. 529), have been issued in a separate booklet: *Classification of Pharmaceutical Preparations* (H.M. Stationery Office, price 3s. 6d.).

CONSUMER purchasing indices for cosmetics, men's toiletries and household products are provided in the first issue of *Market Research* published by Technical Planning Ltd., 73 Elgin Avenue, London, W.9. The tables dealing with pharmaceutical products include a few analgesics, antacids, laxatives, vitamins, health drinks, and throat and cough remedies.

THE National Fund for Research into poliomyelitis has given £14,620 to the Royal Victoria Infirmary, Newcastle-on-Tyne, and £12,875 to the Institute of Neurology, Queen Square, London, W.C.1, for the purchase of electron microscopes to study virus diseases. The fund has also contributed £1,635 towards the preparation of a four-volume index of equipment for the disabled to be published in October.

SPORT

Golf.—LONDON CHEMISTS' GOLFING SOCIETY, at Muswell Hill golf club, on June 15. A bogey Stableford competition was held with the following results: *Butler & Crispe Prize*, R. M. Kean, 34; *Burgoyne Cup and Prize*, G. T. Morson, 33; *Professor Flint Cup and Prize*, D. Carter, 31; *Other leading scorer*, M. N. Doyle, 31.

LOCAL OFFICERS

PHARMACEUTICAL ASSOCIATION

Manchester.—*President*, R. G. Parry; *Vice-president*, Professor H. Brindle; *Vice-presidents*, G. I. Thomas and C. Melville; *Social secretary*, Mrs. J. M. Rawcliffe; *Treasurer*, H. Burlinson; *Secretary*, A. E. Thorpe, 4 Pinfold Drive, Cheadle Hulme, Cheshire. Phone: HULme Hall 2566.

TOPICAL REFLECTIONS

By Xrayser

Practice of pharmacy

Your editorial article on the detailed syllabus for Pharmaceutics III provides a lucid and comprehensive survey of the changes envisaged, and focuses attention on certain aspects which warrant the careful consideration of all who concern themselves with the practice of pharmacy, as distinct from "The Practice of Pharmacy." Much of the material has, in the past, had to be learned in the hard school of experience, some of it during the course of apprenticeship, and some during the passage through life itself, though there must be many who have had, in the material sense, a successful career, yet have had a very imperfect acquaintance—if any at all—with some of the matter included. One's first impression, on reading the details, is that those responsible have been concerned to see that nothing was left out. Yet how much of it was unconsciously acquired as routine by frequent repetition in the course of a good apprenticeship, by the simple process of exposure to the atmosphere. You refer to the possible problem of devising a system for the precise assessment of candidates' knowledge of Section K, and there is, undoubtedly a problem, foreseen in part by those who have formulated the syllabus, for if it is found necessary to make provision for calling on the services of specialised visiting lecturers in the schools—and provision is made in the syllabus for that—who is to examine in those aspects?

Other points

Among other points in your leader—all of which require careful study—the change with the greatest possible influence on the future of pharmacy is the exclusion of forensic pharmacy as a separate subject, and its inclusion in Pharmaceutics III, with its implication that the university graduate will no longer be required to subject himself to any examination by the Pharmaceutical Society before admission to the register. The Society will then accept the responsibility of adding to its register a large number of people of whose knowledge of a vitally important subject it has no first-hand knowledge. As the body statutorily responsible for the administration of the Pharmacy Acts, that may seem to many to be a strange way of fulfilling its responsibilities. One can understand that a situation may arise in which pressure exerted in Parliament may—after a struggle—pare away some of the rights and privileges of a professional society, but what is suggested is a voluntary renunciation that will forestall any such official action.

Differences

In his long and interesting letter, Mr. K. Jenkins has gone to great trouble (p. 725) to elucidate, for my benefit, the resolution passed by the Branch Representatives at their meeting in London. He writes that his letter is an "attempt to elucidate the Portsmouth and West Hertfordshire motion which, unlike the majority of branch representatives, Xrayser seems to have difficulty in understanding." But I hasten to assure Mr. Jenkins that I had no difficulty in understanding the motion, nor did I say so in the paragraph which stimulated his letter. What I, in fact, wrote was that I found it a little difficult to follow the reasoning of one of the speakers supporting the motion. That is a different matter. The difficulty was created by Mr. Jenkins's reference to the Government's "rightful exploitation of the manufacturers of proprietary medicines to the tune of many million pounds a year," by levying purchase tax on their products, followed by the statement that members of the public should pay the tax on their gullibility. And now, in his elucidation, Mr. Jenkins says that he hopes that the Government will include the *purveyors* of advertised proprietaries with those of alcohol, tobacco and luxuries for the purpose of indirect taxation. But surely in indirect taxation it is the consumer who pays the tax—not the manufacturer or the purveyor? I had, and have, no quarrel with the motion.

PERSONALITIES

MR. JOHN P. SAVAGE, who has announced that he is retiring as chairman and managing director of Boots Pure Drug Co., Ltd., and associated companies at the end of the current financial year, has held those offices since 1954. Mr. Savage joined the company as an office boy in 1911. After service in the 1914–18 war he returned to Messrs. Boots in 1919 and in 1921 was appointed to assist in the establishment of the expense control department. He was appointed administrative general manager in 1936, became a member of the executive management committee in 1937 and in March 1942 was appointed to the board. He became joint vice-chairman of the company in 1951 and succeeded to the chairmanship upon the retirement of the late Lord Trent in 1954.

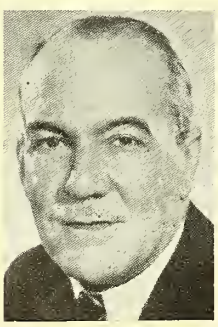
MR. WILLOUGHBY R. NORMAN, who is to succeed Mr. J. P. Savage as head of Boots Pure Drug Co., Ltd., has been vice-chairman since 1954. Mr. Norman had been due to join the company on September 15, 1939, but the war supervened. He served with the Grenadier Guards throughout the period of hostilities. On joining Messrs. Boots in 1945 he was appointed in the following year to take charge of the newly created farms and gardens division, then virtually non-existent. He became a member of the executive management committee in 1948 and was appointed to the board in 1951, becoming assistant general manager working directly under Mr. Savage. Mr. Norman, who lives at Pickwell Manor, Melton Mowbray, is High Sheriff of Leicestershire. He is a director of the Atlas Assurance Co., Ltd., and a member of the Council of the University of Nottingham. His recreations are hunting, shooting and farming. In 1934 he married the Hon. Barbara Jaqueline Boot, eldest daughter of the late Lord Trent.

MR. FRANCIS A. COCKFIELD, who is to become the new managing director of Boots Pure Drug Co., Ltd., has been the company's finance director since 1953. Leaving school at the age of seventeen, Mr. Cockfield started work as a clerk in the Customs and Excise. He subsequently took a B.Sc. degree in economics at the London School of Economics and was also called to the Bar (Inner Temple) in 1942. Mr. Cockfield joined the Inland Revenue in 1938, served under a succession of Chancellors of the Exchequer, and in 1945 succeeded Mr. S. P. Chambers (now chairman of Imperial Chemical Industries, Ltd.), as Director of Statistics and Intelligence. In 1951 he became a Commissioner of Inland Revenue and a member of the Board of Inland Revenue. He gave evidence before the Royal Commission on the taxation of income and profits in 1951 and to the Radcliffe Committee on the Monetary System in 1958. Mr. Cockfield joined Messrs. Boots in 1952 as a member of the executive management committee, and in 1953 was appointed finance director of Boots Pure Drug Co., Ltd. In 1955 he also became a director of all the subsidiary companies.

Mr. J. R. Savage

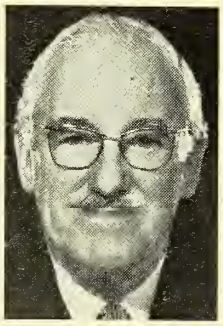
Mr. W. R. Norman

Mr. F. A. Cockfield

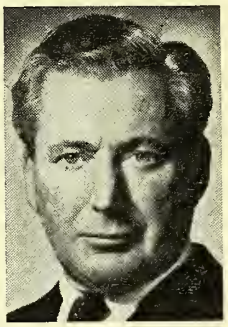


Mr. K. D. Williamson

Mr. B. E. KENT, M.P.S., who retires on June 30 from Allen & Hanburys, Ltd., joined the company in January 1924 as assistant to the sales manager and became advertising manager in June 1926. Since then he has been responsible for the company's home and overseas advertising and has travelled widely in its interests. Mr. B. E. Kent served his apprenticeship with his uncle, Mr. J. H. Kent, F.P.S., Swansea; he studied at the Pharmaceutical Society's School of Pharmacy and qualified in 1922. While at the School of Pharmacy he captained the hockey team, was a regular contributor to the *Square Chronicle*, and designed the badge of the "Square" Association. He was chairman of the publicity committee for the 1933 and 1953 meetings of the British Pharmaceutical Conference held in London. For over thirty years he was a member of the executive committee of the Incorporated Society of British Advertisers, and its chairman in 1942 and 1943. He is the only founder member of the Audit Bureau of Circulations established in 1931 still serving on its council, and was its chairman in 1939 and 1941. He is a Fellow and past-president of the Incorporated Society of Advertisement Consultants and a Fellow of the Incorporated Advertising Managers Association. With four other publicity men he raised the first 100,000 blood donors in the early part of the 1939–45 war. One of Mr. Kent's recreations is painting and he has been a contributor to many exhibitions. In 1955 he was awarded a certificate of merit at the *Salon des Médecins, Paris.*



MR. T. D. C. CORDNER, who was elected honorary treasurer of the Proprietary Association of Great Britain at the Association's annual meeting on June 16, replaces Mr. Bernard Elliman, who has held the office for the past twelve years. Mr. Cordner is managing director of the International Chemical Co., Ltd. He has spent much of his working life in the pharmaceutical industry. Born in Northern Ireland, Mr. Cordner was educated at Campbell College and Queen's University, Belfast. In the 1939–45 war he was commissioned with the Royal Air Force and saw active service in the Western Desert, later being associated with Air Command Operations in Iraq, Persia and Berlin. In 1946 he became publicity director of John Wyeth and Brother, Ltd., of whose board he is still a member. He has been managing director of I.C.C. since 1957.



MR. KENNETH DYBALL WILLIAMSON, who is to be the deputy managing director of Boots Pure Drug Co., Ltd., joined the company in 1930 and, after visiting various departments, worked in the toilet buying office in London until 1939. Throughout the war he served with the Royal Artillery and on returning in 1945 he was immediately appointed fancy goods buyer, becoming head of the toilet buying office in 1954. Since 1955, as head buyer and a member of the executive management committee, he has been in charge of buying, stock investment, warehousing and distribution.

DEATHS

BROMLEY.—On June 9, Mr. Albert William Bromley, M.P.S., 6 Cornbury Road, Edgware, Middlesex, aged eighty-five.

GORRY.—On June 4, Mr. Joseph Gorry, M.P.S.I., 54 South Main Street, Naas, Eire. Mr. Gorry, who qualified in 1899, was a former member of the Council of the Pharmaceutical Society of Ireland. An all-round sportsman, he was a prominent hockey and cricket player, who later, when he turned to golf, made a name for himself as a player of almost national repute. Three of Mr. Gorry's sons are pharmacists: Messrs. Joseph Matthew, New Ross; Patrick Aloysius, Baltinglass; and John Conleth, Naas.

JONES.—On June 8, Mr. William Ivor Jones, M.P.S., 7 Half Moon Lane, Herne Hill, London, S.E.24, Mr. Jones qualified in 1920.

RUGG. — Recently, Mr. Bernard Walter Rugg, M.P.S., 162 Hendford Hill, Yeovil. Mr. Rugg qualified during 1923. He retired about a year ago from the business he established in Thornbury, Glos.

NEW PRODUCTS

With Hydrocortisone. — William R. Warner & Co., Ltd., Eastleigh, Hants, announce the introduction to the medical profession on July 4 of Ecomytrin cream with hydrocortisone. The new formulation combines the properties of the existing Ecomytrin cream with those of hydrocortisone, which is present in the proportion of 1 per cent. The preparation is designed for the treatment of infected skin lesions where inflammation is a problem. The packs are 5-gm. and 15-gm. tubes.

Thalidomide with Ephedrine. — The Distillers Co. (Biochemicals), Ltd., Broadway House, The Broadway, Wimbledon, London, S.W.19, have launched a new speciality, Asmaval tablets, combining Distaval brand thalidomide (a non-barbiturate sedative) with ephedrine hydrochloride. The product is indicated as a routine preventive measure against attacks of asthma, including broncho-spasm associated with chronic respiratory disease. For asthma patients the Distaval component is claimed an ideal sedative as it causes no respiratory depressions and thus brings a new measure of safety to asthma control. Each tablet contains 12·5 mgm. of Distaval brand thalidomide and 20 mgm. of ephedrine hydrochloride. The packs are a tube of 25 and bottle of 100 and the product is classified S.4B of the Poisons Rules (prescription only).

Psychotherapeutic Agent. — Roche Products, Ltd., 15 Manchester Square, London, W.1, are introducing a new psychotherapeutic agent developed in the company's research laboratories. The compound (7-chloro-2-methylamino-5-phenyl-3H-1,4 benzodiazapine-4-oxide hydrochloride) is being marketed under the name Librium. It is described as completely different chemically, pharmacologically and clinically from meprobamate, chlorpromazine or the reserpines, though its versatility covers the main clinical indications of those compounds in general medicine and psychiatry. The safety margin is understood to be wide, and side effects to be infrequent and readily controlled by reducing the dose. In conditions of tension and anxiety, in functional disorders, agitation, phobias and obsessions, Librium provides a "unique, safe and rapid control." It is being issued in capsules each containing 10 mgm. of active ingredient. Pharmacists are advised to supply on prescription only.

Selective Mucolytic Agent.—Denver Laboratories, Ltd., 12 Carlisle Road, London, N.W.9, have introduced a new selective mucolytic agent, Organidin (2,3-(2-and 3-iodopropylidenedioxy) propanol. It is presented as a solution containing 50 mgm. in each mil and as tablets each containing 30 mgm. Organidin, which is stated to liquefy tenacious mucus and to increase the output of thin respiratory-tract fluid, is indicated in bronchial asthma, bronchitis, bronchiectasis and to promote sinus drainage. Combining the mucolytic properties of glyceryl ethers such as glyceryl guaiacolate with those of the iodides, it is claimed more potent than either group used alone. Organidin contains no free iodine or inorganic iodide and gives a negative starch test. It is understood not to cause gastric irritation, and to be suitable, therefore, for both children and adults. Taken in water or milk it is almost tasteless, and the liquid may be employed as an ingredient of a cough mixture if desired. Organidin liquid is issued in dropper bottle of 30 mils, and Organidin tablets in containers of 100 and 250.

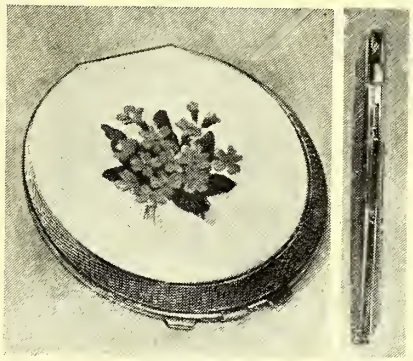
Nail-colour Shades.—The new Peggy Sage range of nail colours, the Jewel Tone range, comprises coral bell, tropical orchid, azure blue, mad pink, pink orchid and desert sand. Distributors are J. C. Gambles & Co., Ltd., 209 Blackfriars Road, London, S.E.1.

New Cosmetic Shades.—Revlon International Corporation, 86 Brook Street, London, W.1, have introduced two new cosmetic shades in their Touch and Glow pressed powder and Love Pat series. The colours are "Cream of Pink," a "soft, muted rosy pink," lighter and softer than "Misty Rose"; and "Ivory Porcelain," a "beautiful shade of beigy-peach."

Spray Net Hair Lacquer. — Akos Chemicals, Ltd., 519 Cambridge Heath Road, London, E.2, are marketing a new spray-net hair lacquer free from gum and water-soluble. It is intended for use as a setting agent as well as a final dressing, and has been given an eye-catching label in pink, black and white. The packs are 6-oz. and 16-oz. pressurised containers.

Hair Set Mist.—George Spencer & Son, Ltd., distributors of Breck shampoos, Kynance Place, Gloucester Road, London, S.W.7, are marketing a new Breck "hair set mist" in slender pressurised containers containing 5½ oz. and 16 oz. respectively. The formula includes lanolin. Messrs. Spencer are also marketing a new Breck Elimin dandruff treatment shampoo containing "compound 22T4." The pack is a 4-oz. bottle in carton.

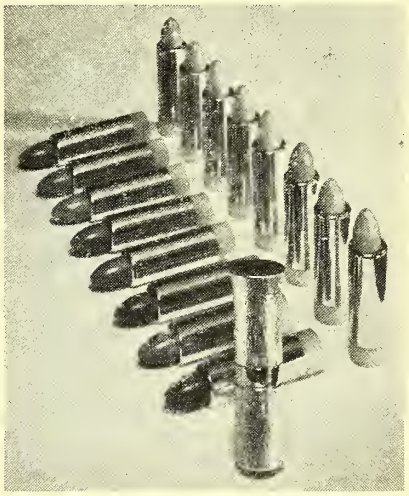
"Thinnest Compact in the World." —The Stratton Thinette, only ¼ in. in thickness, has been specially designed by Laughton & Sons, Ltd., Birmingham, 14, for evening and cocktail-party



wear. It applies a new principle for preventing powder leakage, two internal lips "marrying" together to make a powder-tight seal when the compact is closed. The compact is available in various enamelled, gilt and engine-turned finishes, the style shown being floral bouquet on satin ground.

Sunscreen Lotion and Cream. — Swistan, a product new to the British market and now obtainable from the sole agent, Cullingford of Chelsea (Castle Soaps of Cambridge, Ltd.), Webber Road, Kirkby, Liverpool, is an aqueous fatless preparation popular for years with mountaineers, ski-ers and sun bathers on the Continent. It contains extracts from potentilla, mallow and chamomile, a synthetic high-molecular sulphiminide that resembles natural protein and possesses a particular affinity for albumen, and lactic acid. Swistan does not stain: it promotes pigmentation of the skin. The product is available as a lotion in red/yellow "squeeze" bottle and as a cream in red, white and yellow tube.

"Florentine" Lipstick Case.—Yardley & Co., Ltd., 33 Old Bond Street, London, W.1, have produced a new lipstick case, which they claim is an



example of superb design and workmanship inspired by "the golden age of Florence." With the new case the company are introducing eight new lipstick colours, bringing their total range to sixteen shades, all of which slip into the new case as easily as into the existing Yardley case. The new shades are pink diamond, pink fizz, Persian pink, Cuban rose, Venetian rose, roulette, baccarat and solitaire.

MAKERS' ACTIVITIES

Donation to University.—Pfizer, Ltd., Sandwich, Kent, are subscribing £50,000 towards the establishment of a county University in Kent.

Employment for Blind Workers. — Blind women and girls are being given employment by Ilford, Ltd., Ilford, Essex, in the manufacture of roll films —work carried out mainly in the dark. The experiment with the first six was so successful that more are being trained.

Veterinary Drug For Germany.—In response to an urgent request from North Germany, where an acute epidemic of parasitic bronchitis (husk) has broken out among cattle, the Wellcome Foundation, Ltd. (Burroughs Wellcome & Co.), flew supplies of Franocide for over 500 animals. Large quantities were simultaneously sent by sea.

TRADE NOTES

An Additional Size. — A. Wander, Ltd., 42 Upper Grosvenor Street, London, W.1, have added to their range of tuberculostatics a pack of 540 Pasinah-302 cachets.

Prices Substantially Reduced.—Tom E. Hobson, Ltd., 46 Crooked Billet, London, S.W.19, announce a considerable reduction in the prices of their Biotta lacto-fermented carrot, beetroot, tomato and celery.

Tetracycline in Britain. — Aspro-Nicholas, Ltd., Slough, Bucks, point out that, in a paragraph published under that heading last week, their antibiotic Ambramycin should have been described as " a new brand of tetracycline " and not as given.

A Telephone Number Corrected. — Macarthys (Wholesale Chemists), Ltd., Romford, Essex, point out that the telephone number of their Manchester depôt is Ardwick 5131 and not as given in the company's advertisement in the June issue of the *C. & D.* Quarterly Price List.

Withdrawals. — ASPRO - NICHOLAS, LTD. (ethical pharmaceutical division), 225 Bath Road, Slough, Bucks, have discontinued the manufacture of Sedaltine tablets; supplies are no longer available.—DUNCAN, FLOCKHART & CO., LTD., Wheatfield Road, Edinburgh, 11, announce the withdrawal of Somnased brand sedative tablet.

A Twenty-four-hour Service.—Lastonet Products, Ltd., Carn Brea, Cornwall, have inaugurated a twenty-four-hour service for National Health Service elastic-hosiery needs. All standard sizes of hose are posted to the chemist within twenty-four hours of receipt of order. Elastic net (Lastonet) hosiery, made always to individual requirements, is dispatched within three days from receipt of order.

Now Exempt from Tax.—The following manufacturers have indicated that the products named have been exempted from purchase tax:—C. H. BOEHRINGER SOHN (U.K. representatives PFIZER, LTD., Folkestone): Valtorin tablets. — F.B.A. PHARMACEUTICALS, LTD., 37 Bedford Row, London, W.C.1: E 39 soluble.—HORLICKS, LTD., Slough, Bucks (distributors for HOECHST PHARMACEUTICALS, LTD.): Cambison.—MEDO-CHEMICALS, LTD., 144 Fortess Road, London, N.W.5: Glycinal tablets. — SMITH & NEPHEW PHARMACEUTICALS, LTD., Bessemer Road, Welwyn Garden City, Herts, announce that Narphen brand phenazocine is now exempt from purchase tax.—CIBA LABORATORIES, LTD., Horsham, Sussex, announce that their product Ismelin tablets, 10-mgm. and 25-mgm., is now tax-free.

Information for Manufacturers

In Search of South African Agencies. —In London on a business visit, Mr. John L. Whitehouse (a director of PAC Distribution, Ltd., South Africa), is looking for pharmaceutical and toilet preparations with a potential in South Africa that does not clash with any existing agency of the company. During his stay in Britain Mr. Whitehouse may be contacted through Gordon & Gotch, Ltd., 75 Farringdon Street, London, E.C.4.

Seamless Gelatin Capsules.—B. & P. Laboratories, Ltd., 9 Packington Road, London, W.3, undertake the manufacture, in the fully automatic Globex machine, of capsules in a wide range of colours and sizes down to 1-mgm. perles.

Raw Materials Processed.—William Ransom & Son, Ltd., Hitchin, Herts, undertake to process customers' raw materials from raw material to final packaging, in accordance with meticulous standards of quality and uniformity, and in strict confidence.

Baby Products to Mothers.—A service of sampling baby products to a mother within days of her new baby's arrival is offered by Bounty Services, Ltd., 13 Little Trinity Lane, London, E.C.4. Every participating manufacturer is given exclusive facilities. The cost is claimed far lower to the manufacturer than running his own sampling organisation.

Liver Preparations and Pancreatin.—A new price list of liver and posterior pituitary preparations and pancreatin conforming with British Pharmacopœia and United States Pharmacopeia requirements has been completed by Gale & Mount, Ltd., Commerce Road, Brentford, Middlesex. The products are manufactured by N. V. Philips-Duphar, Amsterdam.

Improved Test for Iodine.—Purkis, Williams, Ltd., 60 Brewery Road, London, N.7, are the manufacturers of Thyodene solid indicator for revealing the presence of iodine. The thyodene is added direct to the solutions to be titrated. Unlike starch paste, it is freely soluble in cold water, producing the typical blue coloration of the starch test. From a bottle containing 100 gm., 200 titrations may be made.

Agents For U.S. Company.—Chemicals Trading Co., Ltd., 18 Creechurch Lane, London, E.C.3, point out that they can supply fibreglass manufactured by their American principals, Owens-Corning Fiberglas Corporation. Basic fibre No. 28 is suitable in the pharmaceutical industry as wadding, stoppers for laboratory equipment and as a filter for liquid oxygen and blood plasma.

" Through " Wagons to Europe. — British Railways direct attention to the facilities they offer in delivering goods to European markets in through wagons by train ferry from Harwich to Zeebrugge and from Dover to Dunkerque. Particulars may be obtained for the Dover route from the Continental Superintendent at Victoria Station, London, S.W.1, and for the Harwich route from the Continental Traffic and Shipping Manager, Harwich House, 129 Bishopsgate, London, E.C.2.

Pharmaceutical Packing.—Services as packers to the trade, both home and export, are offered by ROBERT BLACKIE, LTD., Pomeroy Street, London, S.E.14. —BROOK PARKER & CO., LTD., Ashfield, Bradford, 7, specialise in the manufacture of galenicals, packed medicinal specialities, etc., for home and export customers.—RICHARD DANIEL & SON, LTD., Mansfield Road, Derby, invite inquiries for price lists of their packed goods. — THOMPSON & CAPPER, LTD., Speke, Liverpool, 24, undertake the manufacture of tablets and offer an " own-name " label service for aspirin and compound codeine tablets.

Pharmaceutical Raw Materials. — The following materials used in the manufacture of pharmaceutical products are available from the suppliers indicated, whose advertisements appear on other pages of this issue:—ALKALOIDS (including arecoline, emetine, hyoscyamine, reserpine); adrenaline, cholesterol, etc.: C. H. BOEHRINGER SOHN, Ingelheim-on-Rhine, Germany. ANALGESICS (aspirin, paracetamol and salicylamide): GRAESSER SALICYLATES, LTD., Sandycroft, nr. Chester. ATROPINE: T. & H. SMITH, LTD., Blandfield Works, Edinburgh. CAMPHOR (and menthol and papain and botanical crude drugs): H. FRISCHMANN, 4 Lloyd's Avenue, London, E.C.3. COSMETIC CHEMICALS (the Bisomel range): DISTILLERS CO., LTD., chemical division, Devonshire House, Piccadilly, London, W.1. DRUG EXTRACTS (and fine chemicals): DOTT. INVERNI & DELLA BEFFA, S.p.A., 99 Via Ripamonti, Milan, Italy. ERGOT ALKALOIDS: JACOBSON VAN DEN BERG & Co. (U.K.), LTD., 3 Crutched Friars, London, E.C.3. ESSENTIAL OILS (and floral absolutes, synthetic perfumery chemicals, etc.): ANTOINE CHIRIS, LTD., Bridge House, Tadworth, Surrey. GALENICALS (and flavours, spices, perfumery compounds, insecticides and essential oils): STAFFORD ALLEN & SONS, LTD., Wharf Road, London, N.1. HORMONES (and ranges of alkaloids and fine chemicals): LAKE & CRUICKSHANK, LTD., North Bridge Road, Berkhamsted, Herts. MALTOSE: TRIFAX N.V., BINNENKANT 28, Amsterdam, Holland. MENTHOL: S. A. SHEPHERD & Co., LTD., 15 Coopers Row, London, E.C.3. PARACHLORMETAXYLENOL (and a range of intermediates): COCKER CHEMICAL CO., LTD., Oswaldtwistle, Lancs. PEPPERMINT OIL (and agar, camphor, essential oils, etc.): WM. CHAS. BRUMLEU, LTD., 5 Fenchurch Street, London, E.C.3. SENNA and RAUWOLFIA: JOHN RONALDSON & Co., LTD., 3 Crooked Lane, Cannon Street, London, E.C.4. SHELLACS (and gums and waxes): A. F. SUTER & Co., LTD., 15 Philpot Lane, London, E.C.3. SALICYLATES (and salol, vanillin, etc.): H. W. GRAESSER-THOMAS, LTD., 49 Leadenhall Street, London, E.C.3. SULPHITES (including sodium sulphite, metabisulphite and hyposulphite): WILLIAM BLYTHE & CO., LTD., Holland Bank Chemical Works, Church, Lancs. SUPPOSITORY EXCIPIENTS (the Witten): CHEMICALS TRADING CO., LTD., 18 Creechurch Lane, London, E.C.3. TANNIC (and gallic and pyrogallic) ACIDS: THE BRITISH DYEWOOD CO., LTD., 19 St. Vincent Place, Glasgow, C.1.

INFORMATION WANTED

Tubafoam
Rollafoam
Ultrasal

Window displays are intended to be seen, not primarily to be photographed, even if dressed for competition. There are technical problems varying with the nature of the display—cameras, for example, requiring different treatment than cosmetics—but the effect on the eye is still paramount. The first consideration, then, is to understand that the camera sees things differently from the human eye.

How to photograph a window display

DOUGLAS F. LAWSON

DURING recent years there has been a great increase in the number of window-display competitions. In most such competitions the entries are judged from photographs, not from the windows themselves; and those, like the author, who judge the entries, see the display from one point of view only—that recorded by the camera. They may see, say, a 15-ft. window condensed into an area of 10 in. by 8 in. or even less. It is, therefore, of the first importance that the picture before them should be as effective as possible.

To begin with, the photograph should be taken from the position best suited to the shape and size of the window and which at the same time catches the best aspect of the display. A conscientious photographer will naturally aim at doing justice to what he sees before him. To enable him to do so there must be understanding between him and the window dresser. From his expert knowledge the photographer ought to be able to give advice on how a display may be improved photographically, and that is what I hope to do in this article. It can, I think, best be done

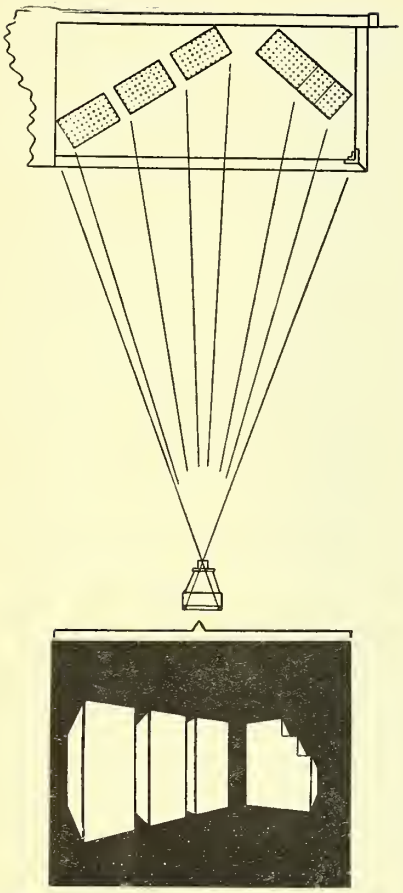


FIGURE 1. The camera arranged to take objects in a window and—below— an impression of what the camera lens sees.

by reference to the diagrams and illustrations.

A glance at Fig. 1, which represents the "eye" of the camera; and at Fig. 2, which represents the eye of a spectator (and, of course, that of the window dresser) shows that the angle of view in each case is entirely different. One can see what the other cannot. The eye can accommodate its vision and, in a split second, travel from one point to another: the camera lens is static. To understand the point clearly, one should study the diagram below the camera in Fig. 1, which represents the image on the negative; and compare it with Fig. 2, the image seen by the eye a little distance from the window. The two are quite different from one another.

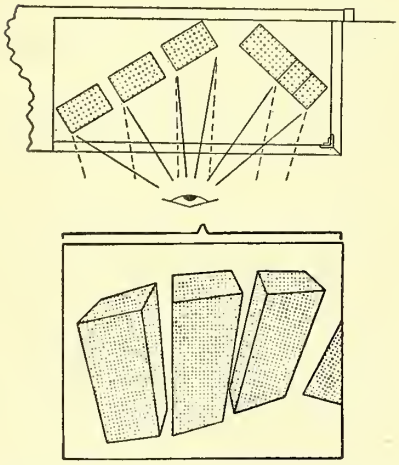


FIGURE 2. The three objects on the left of the window as seen by a window shopper close to the glass front.

When taking a picture of a window display the photographer aims to reproduce the subject in correct shapes and related sizes. That can only be achieved by taking the picture from the correct distance from the display (Fig. 1). The distance is governed by what is the true perspective of a window and its contents, and some idea of the variation of perspective effect is shown in Fig. 3 (A, B and C).

In Fig. 4 the camera is in readiness to take a photograph and stands approximately 4 ft. above ground level. That nearly always brings the lens to bear on the centre of the window, some way from the display, and produces the picture in true perspective Fig. 3 B. A glance at Fig. 5 shows that the eye at its normal viewing height has an angle of view far steeper than that of the camera (Fig. 4). The reader should pause and compare the two photographs—those taken from the positions of the eye and camera. To test the point practically the pharmacist should stand in front of his own window (Fig. 5), keeping his eyes focused on an object in it, and walk slowly backwards to where the camera would properly be. In doing so one notes that objects which first looked fairly short have grown tall, and those which showed their tops, dwarfed, now show their sides. In addition, near objects are now large in relation to those at the back of the window, giving an impression of depth.

Opposites

From the close-up, looking-down position, the camera records a top-heavy unnatural impression; and the opposite extreme is created if the camera is too low and too near, all vertical lines converging towards the top with a "falling backwards" appearance. The nearer the camera to the subject the greater the angle of tilt, and the more exaggerated the sloping effect. Therefore, when dressing a window for a photograph, the display man should first work out the position where the camera lens will be when the photograph is taken, and do the dressing accordingly. The camera then records what the eye has seen.

The good photographer is an artist. He "paints" his pictures with light and has to pay particular attention to contrasts, perspectives and differential

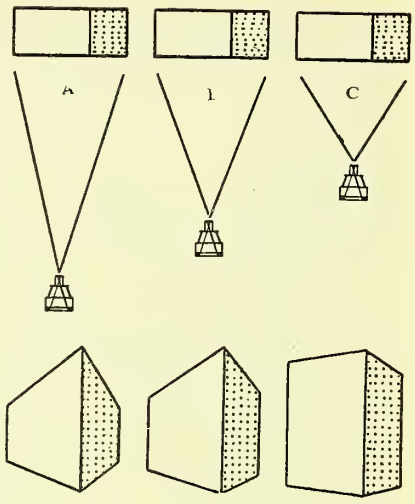


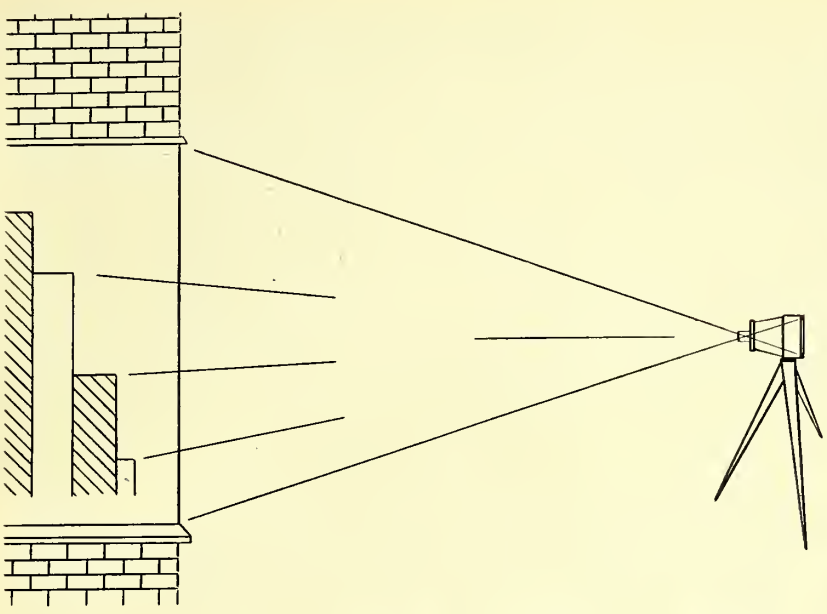
FIGURE 3. Plan view of objects. Below: Images recorded by the camera. A, distance from camera to window too long in relation to the focal length of the lens used. Perspective is over accentuated. B, distance from camera to window is equal to the focal length used, producing a normal and natural perspective. C, distance from camera to window is too short compared with the focal length of lens used. Picture result appears flattened and compressed.

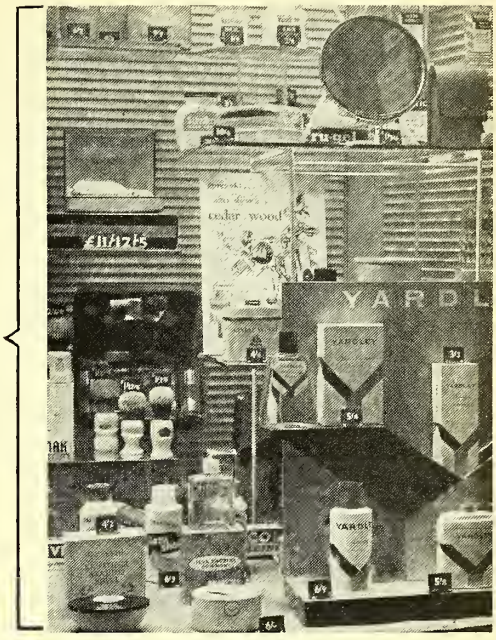
focusing so as to give a three-dimensional effect on the flat surface of his print. An additional and very important feature of picture making is composition or expression. The window dresser "paints" his window with objects of various shapes, tones and colours, and he should use them artistically. He can take full advantage of true depth, width and height and should emphasise background colours to express an idea or call attention to the window's contents.

But let caution be exercised in the use of crêpe paper as a background dressing. A pretty girl may dress in plain clothes and still inevitably draw attention to herself. But a plain girl has to dress in pretty clothes if she is to attract equal attention. To go further and dress the pretty girl in pretty clothes may cause her to lose some of her personal attraction; while if the plain girl is dressed in dull clothes she looks even more plain and unattractive. The application of that point to the window dresser is that he must bear in mind the effect of the background dress on the goods he is about to display. The whole object of dressing the window is to attract attention to goods and a good picture always commands attention.

Simplicity the golden rule

The golden rule for the window dresser in a competition, or indeed at any time, is simplicity. One bottle of perfume nicely positioned on a beautifully draped stand and dramatically illuminated makes more impact than a





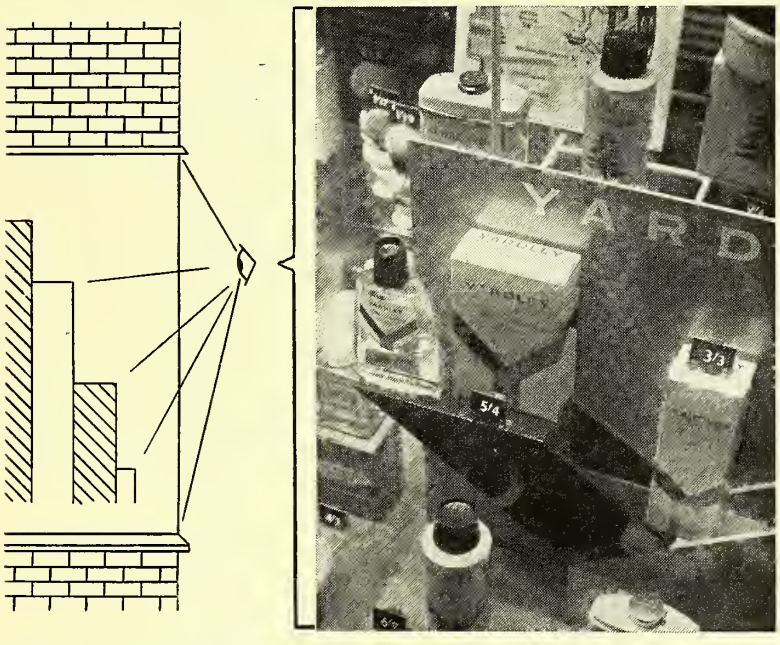


FIGURE 4 above: Camera in readiness to take a photograph. Lens about 4 ft. above ground level. Right: The resulting picture, in "true" perspective.

FIGURE 5 (at left). Far steeper viewpoint of the eye, and the very different picture the retina receives.

whole window full of similar items closely packed. It is equally true—and this is important to the chemist—that large masses of various shapes and colour skilfully arranged and balanced in large windows can give quality and breadth and can be used to emphasise or quieten areas or points of focus. It is not a good policy to divide the window into equal parts, either by grouping or by a definite horizontal or vertical line. It is also a bad policy to mix circles and squares (Fig. 10, p. 757) in one window. That is rather like trying to hold two conversations at the same time! Large windows tend to invite that sort of error, but the window artist must firmly adhere to the principles of balance and design. Those are satisfied by placing the main point of interest a little to one side and either higher or lower than the exact centre of the window area.

It is appropriate to imagine one's window to be a blackboard divided into three parts, vertically and horizontally (nine in all) (Fig. 12, p. 757). That provides four points of intersection: E, G, F and H. If the strong-point of the window display is placed at or near any of those points it will make a strong contribution to an attractive display. Another leading object of interest should, however, be placed somewhere on the lines AA, BB, CC or DD, avoiding the centre. Symmetry is not to be recommended. It would be precluded by leading up to major display points at H and F. Finally, when using the line AA one should break it up with objects that project one above the other, thus avoiding the impression of a false horizon.

The eye automatically moves from left to right across the window from the main point of interest, through the centre, until it finds a related point of interest on the other side. That does not happen in Fig. 10. The eye cannot avoid seeing the disproportionately large display card. Having read it, the person looking at the window finds himself looking next at the square at the top left, and almost immediately he jumps to the circular figure at the bottom right. What has happened is that the eyes jump from one figure to another because the window lacks harmony. Fig. 11 appeals to the writer as more in harmony with the proper way of seeing. Here the eye is guided to "beauty-double." The circle at the top is bold and strong enough to arrest the eye and is known pictorially as a "stop." Lower right is another "stop," which also serves as an edge, framing

FIGURE 6

Eye-catching showcards have here been used with telling effect as main elements in a forceful display. Top right is another display in which showpieces provided by the manufacturer have been put to good use, though in a rather different way. Everything here serves to concentrate attention on the slogan of the centrepiece.

FIGURE 7

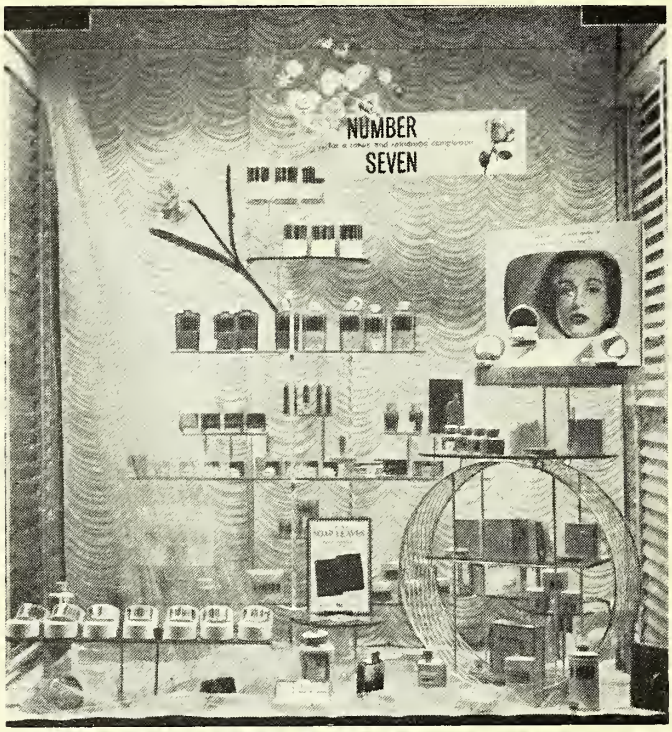


FIGURE 8

Specially dressed for the writer of article. How a multiple has tackled, with conspicuous success, the problem of presenting a series of cosmetics in a glamorous setting while enabling each member or series to be separately presented. The vertical bottles are at eye level or higher, the flat cylinders of the face-powder boxes where they may be looked down upon, the smaller lipsticks, etc., between them and rather below eye level.

FIGURE 9

The display of goods for baby brings assorted merchandise into a unified display dominated by the baby's head and display piece that sets the theme.

the whole window area—that represented in Fig. 12 by the letters E. F. H.

The point to emphasise is the importance of "stops" at either end of the display. They hold the customer's interest in the window, at the same time creating a sense of balance in the display. If there is a main theme in the display at one end, it needs a well-positioned "stop" at the other. Most people dislike looking at a picture that has nothing to hold their attention at the near edge, allowing the glance to "fall out" through indifference.

Balance, or composition, relates not only to the actual positions of the objects within the window area, but also to the relationship between one subject and another. It is the opposite of presenting masses of unrelated objects, which provide the sort of distraction that obscures from judges the idea that prompted the chemist to make the display. Advertising boards (display cards), however beautifully they may have been printed, can ruin what would have been a well-dressed window. A

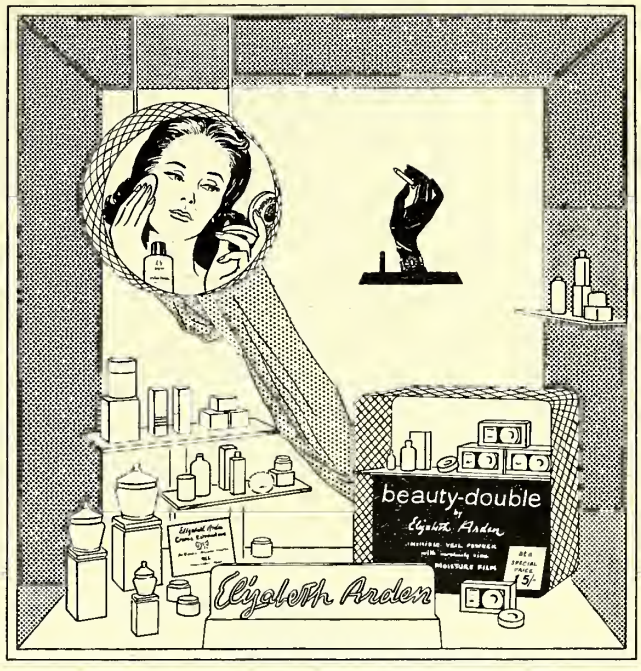


FIGURE 10. It is normally bad policy to mix circles and squares in one window, and this display is also spoiled by a disproportionately large showcard. FIGURE 11 shows how the display, when redesigned using the same material, may be given a greater impact.

glance for a moment to Fig. 6 will demonstrate that the cards are the dominant feature and that the products are subsidiary. Discretion is called for in the display of cards and selectivity in the way they are used. Manufacturers are, of course, interested in getting their goods brought to the notice of the public through the medium of showcards. How they are shown is left to the display man. The foreground of the window is an important part of the composition. It has been termed the "door step" or lead in" to the window, and when the background or main subject is light in tone it is advisable to use a dark foreground that prevents the eye from wandering.

As a rule the lighting of the window display is directed from the ceiling. The effect of that is to help to create "modelling" by throwing slight shadows. Increasing the lamp wattage may be called for in a "strong" subject (Fig. 7, p. 756). It is quite possible to reproduce realistic pictorial effects by the clever use of lighting, but when too much light is out of keeping with the theme of the display the whole point of the window may be lost.

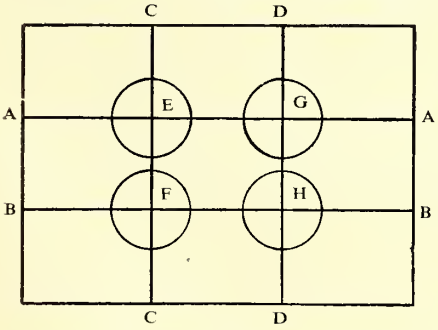


FIGURE 12. Four points of maximum interest. They lie at the intersections of vertical and horizontal "thirds."

The effort should be made to avoid occupying too great an area of the window with annotated white cards and price tickets, because they can divide attention. Recently the writer photographed a window display (not for competition) which was a mass of price tickets, each 3 in. by 4½ in.; and on the photographic print they looked like falling snowflakes. I took the trouble to measure them collectively, and found that over one-quarter of the window picture consisted of white cards!

Some chemists, of course, photograph their own window displays. If the camera used is a small one with a wide-angle lens (Fig. 13) there may be some difficulty in keeping the vertical lines upright. To overcome that the photographer should stand well back. This will mean that the negative image is smaller, but the resulting perspective and uprights are more pleasing.

As a rule the professional photographer uses a plate camera, which is fitted with a lens of 6-in. focal length incorporating an adjustment that enables him to correct converging or diverging lines.

An exposure with a 2-in. lens may be made from the same distance as that required for a camera with a 6-in. lens, but, of course, the image will need enlarging three times to bring it to the size of that produced with the 6-in. lens. The advantage gained is the true perspective of the result.

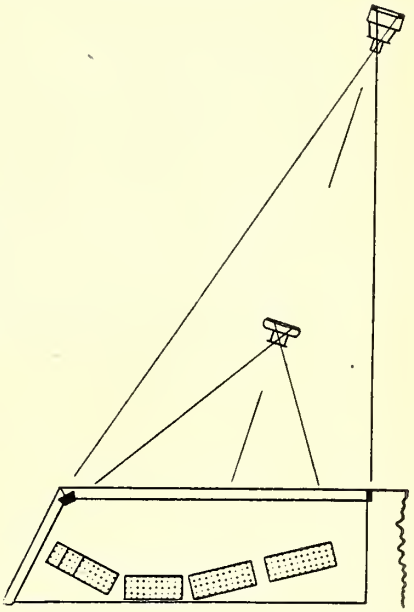
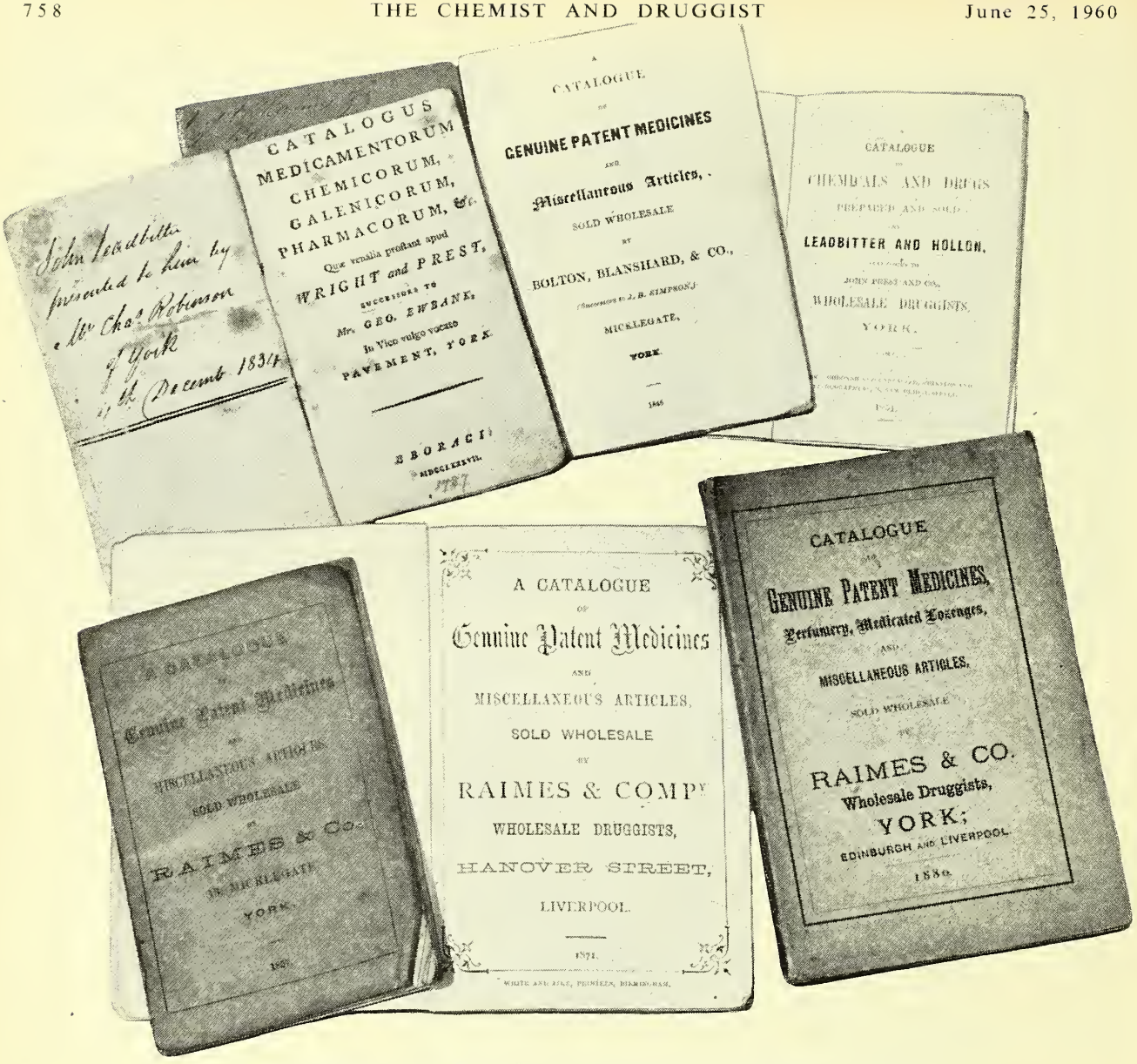


FIGURE 13. A small camera with a wide-angle lens may present difficulty in keeping vertical lines vertical. The remedy is to stand well back and accept a smaller negative image.

A final word: shop windows are among the most difficult of subjects to photograph in daylight, owing to the many and varied reflections that appear in the glass. An Ilford Q or Kodak Pola filter should be used to eliminate them.

The author expresses his thanks to the manager of the Epsom branch of Boots, Ltd., for their co-operation in placing windows at his disposal.



A COMPANY'S EARLY HISTORY IN PRICE LISTS

A SERIES of early catalogues in the possession of Raimes & Co., Ltd., Wholesale Druggists, York, not only provides the proof of the ancient lineage of the business, but is in itself a commentary on the changes that have taken place. The first, with the imprint Eboraci and the date MDCCLXXXVII, is entitled "Catalogus Medicamentorum Chemicorum, Galenicorum, Pharmacorum, etc., quae venalia prostant apud Wright & Prest, successors to Mr. George Ewbank, In Vico vulgo vocato, Pavement, York." It is an eight-page catalogue without prices. The page size is only $4\frac{1}{2}$ x $2\frac{3}{4}$ in. and all the items are in Latin under the sectional titles "Chemica," "Galenica," "Pharmaca" and "Miscellanies." Except in the miscellaneous section at the end, all the entries are in Latin and even that final section finishes up with the words "Cum multis Aliis." In the chemical section items worth mentioning are Æthiops antimon and Æthiops vegetab, bezoar mineral, chalybs cum sulpr, diagredium, elaterium, laud. liq. syd. vel tinct. thebaica, ol. philosophor, sal rupiliens, etc. The line between "chemica" and "galenica" indeed seems strangely drawn, for acet. distillat. vel sp. aceti appears under chemica, whereas acetum scillisicum appears under galenica. The chemical section contains thirty-four tinctures. There are none among the galenicals, but that section does list three dozen aquæ, twenty-six emplastra (including ad herniam, attrahens, de ranis cum merc and vermifug.), rather more than that number of olea (including de Behen, hirundinum and lumbricor), and more than a score each of syrups and unguenta. The pharmaca, corresponding apparently to materia medica, include adeps viper, agaricus, four varieties of aloes, ærugo æris gallic and fab. Jesuit, and under miscellanies are included anchovies, bay salt, bolter cloth, boxes of scales and weights, canary seed, a variety of spices, crucibles in sorts, drams and grains in sets, elixir salutis (half pints and quarter pints), gally pots in sorts, glyster pipes (box and ivory), issue plaisters, party and leaf golds, leaf silver, glass and marble mortars, mullers, oil cloth, serces of several sorts, spruce beer, Stoughton's elixir and Bath, Bristol, German Spaw, Pyrmont and Zeltzer waters.

The next list, dated 1846, has a page size of $4\frac{3}{4}$ x $3\frac{1}{8}$ in. and is labelled "A catalogue of Genuine Patent Medicines and Miscellaneous Articles, sold wholesale by Bolton, Blanshard & Co. (Successors to J. B. Simpson) Micklegate, York." A written note on the cover reads "? G. Dennis succeeded Simpson and B. B. & C. succeeded G. D." The catalogue contains eighteen pages, with prices per dozen

and retail of a large number of patent medicines, and with the footnote "and all other patent and proprietary medicines at trade prices." There is a section of miscellaneous articles for sale, containing such items as Acton's corn rubbers, Children's paints, eau de Cologne, gelatine, lip salve, magic fusees (per 1,000), Royal scent packets, and wax tapers and bougies (per lb.). A supplementary list, without prices, relates to druggists' sundries, etc., containing items for use by the chemist in his dispensary, but with a subsection that contains Lazenby's pickles, Harvey's sauce and numerous preparations of like kind.

A plain brown-covered list without lettering on the cover is dated 1854 and has a page size of only 4 x 2⅝ in. Its inner title page reads "A catalogue of Chemicals and Drugs prepared and sold by Leadbitter and Hollon, successors to John Prest and Co., Wholesale Druggists, York." Its entries, though much more like later catalogues in general style, are again without prices.

The first catalogue in the series bearing the name Raimes & Co., is dated 1857 and labelled "A catalogue of Genuine Patent Medicines and Miscellaneous Articles, sold wholesale." The address is 13 Micklegate. The page size of the list is 4⅝ x 3⅛ in., and the booklet has a pale blue-green cover and twenty-four pages. A section of nearly two pages is given over to "Sauces, Pickles, etc.", and the section on druggists' sundries, etc., is more strictly confined to utensils for the chemist and druggist. Another price list, evidently from the same printing run, has been carefully interleaved with plain paper for the addition of numerous entries in manuscript, and yet another has been given its own stiffened cover with end papers of oriental design in blue and gold. By 1871 the catalogue had grown to a page size of 5¼ x 3¾ in. and to a 60-p. booklet. A loose inset dated 1873 explains that "owing to the increased cost of many proprietary articles, Raimes & Co. are compelled to advance their prices for the following, viz.:—", the list including Allcock's porous plasters, Bishop's magnesia (advanced to 1s.), Bragg's charcoal biscuits (advanced to 1s., 2s., 4s. and 8s.), Calvert's carbolic acid (advanced to 1s. 6d. per 1 oz. and *pro rata*), and Dinneford's magnesia (to 1s., 2s. 6d. and 4s. 6d., etc.). In the last of the series, dated 1880, the words "Perfumery, Medicated Lozenges" have been inserted between "Genuine Patent Medicines" and "Miscellaneous Articles," and though the name Raimes & Co. appears on the cover each left-hand page is headed "Raimes, Blanshards, & Co.'s." Why the surname of 1846 has been reintroduced is unexplained.

In 1901 Raimes & Co. took over the business of Slinger's, York, a firm catering exclusively for doctors. That business had itself taken over a number of small wholesale druggists trading in the city, through whom they claimed to trace their business back to the time of Charles II.

Newcastle as Conference Centre

Scene of the first meeting of British Pharmaceutical Conference 97 years ago, the city of Newcastle-on-Tyne is the "new" castle of the Normans, by contrast with the older—and by that time virtually forgotten—castellum of the Roman Emperor Hadrian. Commanding a navigable river, and with rich coal seams discovered beneath its soil, the city became the premier seaport, mining and industrial centre of the North-East. Inventiveness and courage have been hall marks of its citizens.*

ALTHOUGH, as will be seen from the chronicle of the first ten years of the British Pharmaceutical Conference, the idea of holding an annual conference of pharmacists originated elsewhere, it was in Newcastle-on-Tyne that the first meeting was held. In his opening remarks as chairman, Mr. Deane said "The object of our meeting together at that first meeting in 1863 is, as you are aware, to establish an annual conference to be held in different parts of the country for the purpose of affording a periodical opportunity of meeting our brethren in the provinces and discussing various subjects of the highest importance to us in our public and private relations, an object which I fully concur, and I trust, if carried out in the spirit in which it has been conceived, will tend to promote the interest and brotherly unity of all engaged in the work; as well as to still further raise the practice of pharmacy more nearly to the character of a profession in the public estimation than it at present possesses, although much and great good has been done in that direction by the Pharmaceutical Society of Great Britain, whose labours to promote this great object have been incessant for the last twenty years. Is it not probable that a wholesome stimulus to intellectual exertion may be given by the prospect of annual gatherings of this kind, and that men in looking forward to them will look around and see whether they, too, cannot add a little, however small, to the usefulness of the meeting and that stock of knowledge which is so important to their own welfare and success in life."

A link between 1960 and that first conference is that the subject of a paper by Mr. B. S. Proctor on that occasion was "Weights and Measures" and that one subject to come up at the ninety-seventh meeting in September is "Change to the Metric System in Pharmaceutical Practice."

Newcastle maintained its position as innovator when the conference met for a second time in Newcastle and twenty-sixth in the series, in 1889.

Ladies' outings were in that year introduced into the programme. Again on the third occasion, in 1909, there was an innovation. It took the form of papers on "Shall Dispensing be Confined to Pharmacists?" and "Some Problems of the Poisons Schedule," introduced in an endeavour to "encourage the so-called non-scientific pharmacist to take an interest in the work of the Conference." The first paper evoked a lengthy discussion, but its introduction at the expense of time allowed for scientific papers resulted in strong criticism from the pharmaceutical and medical Press. One valuable outcome of the criticism was that renewed emphasis was placed upon the object of the founders of the Conference, namely the advancement of pharmaceutical science. At the 1909 Conference, also, Dr. William Martin presented a paper on the then recent development of biochemical methods of standardisation of drugs. Thus was introduced to the Conference the most interesting subject of digitalis standardisation, on which much of the work reported upon at that time had been undertaken in Newcastle. Newcastle, too, has made its contribution to the list of distinguished persons who have been associated with the British Pharmaceutical Conference during its history. The names of Brady, Proctor and Martin are an evergreen of

*The rendering of the Post Office Guide. Most Novocastrians prefer "Newcastle upon Tyne."

outstanding Novocastrian contributions to pharmacy, both locally and nationally, by those three.

The Newcastle Story

As a city, Newcastle takes its name from the Novum Castellum of the Norman mound-and-bailey castle around which the township, later to become a city, grew up. The Romans had known the area at a much earlier date for, in the west of the city, may be seen a short stretch of Hadrian's Wall at Denton, and at Condercum are the remains of a temple and the crossing of the vallum. Kipling wrote of the seventy-three-mile-long wall built by Hadrian's legions eighteen centuries ago:

> "The hard road goes on and on—and the wind sings through your helmet plume—past altars to Legions and Generals forgotten, and broken statues of Gods and Heroes, and thousands of graves where the mountain foxes and hares peep at you. Red hot in summer, freezing in winter in that big purple country of broken stone. Just when you think you are at the world's end you see a smoke from East to West as far as the eye can turn, and then, also as far as the eye can stretch, houses and theatres, barracks and granaries, trickling along like dice behind—always behind—one long, low, rising and falling, and hiding and showing line of towers. And that is the Wall."

The Roman legions also built at the eastern end of their wall (and on the site of the present swing bridge at Newcastle) the bridge Pons Ælius, on which stood a shrine with two altars and a commemorative slab. When the Continental invader came, however, the Romans withdrew, and nothing more was heard of the area until the arrival of the Normans. Two centuries later the area was enclosed by a two-mile-long city wall, with seven gates and nineteen towers, of all which there remain today, north of the West Gate, the Durham, Heber, Morden and Ever towers, stretching up through St. Andrew's churchyard to the New Gate. Within those walls for another five centuries remained a mediæval tower, to the south of which was a single stone bridge lined with shops and houses. Outside, the burgesses had acquired the land which is now the great lung of the modern city—the Town Moor—on which to this day cattle graze.

During that mediæval period the importance of mine and river developed, continuing until both Newcastle and Tyneside came to be thought of in terms of those industries. Today mining, shipping and shipbuilding, now linked with a vast engineering industry, continue to play a tremendous part in the city's economy. From the shipyards of Newcastle have proudly slipped the "Mauretania," "King George V," "Howe," "Empress of Britain" and—more recently— the "Empress of Canada." All those owe much to the inventive genius of Charles Parsons, whose marine steam turbines revolutionised ship propulsion and added prestige to the skill of the Tyneside builders. From his factories also came an ever-growing output of larger and yet larger turbo alternators for the world's power stations. Others of the city produced the switchgear and electrical equipment to accompany them. Keeping pace with modern development, those enterprises are now expanding into the new field of atomic power station production. The city possesses also a factory devoted to the making of telescopes, and from it during the next few years Britain's new 98-in. telescope will emerge. Eighty years ago a Novocastrian, Sir Joseph Wilson Swan, invented the electric light bulb, and used it to make Mosley Street the first electrically illuminated street in the United Kingdom. Electric lighting then replaced gas, which had been used in the street for sixty years previously.

In recent years new industries have come to the city and its environs and now along Tyneside there are factories producing soap, detergents, plastics, furniture, cigarettes and tobacco, chocolates and pharmaceutical preparations. The headquarters of the Ministry of National Insurance, the Central Pricing Bureau for England and Wales, and associated bureaux provide employment for many.

In the surrounding countryside of Northumberland also there is a wealth of beauty and absorbing interest. The county is inadequately known, but its scenery is so diverse as to make it one of England's most attractive regions. At the south stretches the Great Wall of Hadrian, preserving along its length evidence of centuries of Roman occupation. The temples, granaries, houses and water-supply systems excavated at the Roman stations of Chesters and Housesteads, or at the military town of Corstopitum, are invaluable sources of information for archæologists.

Along Northumberland's coast the visitor is brought into direct contact with the coming of Christianity to this country. Lindisfarne (Holy Island) lies offshore, but may be reached across a causeway at low tide. To it came St. Aidan from Iona, to become the first abbot of the monastery. At a later date St. Cuthbert became possibly Lindisfarne's most venerated abbot. Today the chief feature of the island is the red sandstone ruin of the Benedictine priory. Just south lie the Farne Islands, now under the protection of the National Trust. Arctic terns, puffins and eider ducks occupy its acres; grey seals bask on its rocks. On Farne also is a small chapel containing a memorial to that brave daughter of its lighthouse keeper: Grace Darling. Nearby, on the mainland, and rising on a rocky formation flanked on either side with sand dunes, stand the majestic walls of Bamburgh Castle, built in 547 by King Ida and later used by Kings Edwin and Oswald of Northumbria. Farther south, and scheduled as an "area of outstanding natural beauty" are the quaint fishing villages of Seahouses and Craster, with ruined Dunstanburgh Castle rising on the rugged coastline. A few miles inland stands Chillingham Castle, seat of the Earls of Tankerville, within whose spacious park live the famous herd of Chillingham wild cattle, descended directly from the great primitive ox, *Bos primogenius*.

On the western side of the county lies the National Park —575 square miles of remote hill country, consisting of mountain, moor and forest and stretching forty miles from Wooler in the north to the Roman Wall in the south. Within its borders in winter skiers gather near Rothbury; in the summer sailing is popular on Greenlee Lough, one of the Northumberland lakes. To the west of the park lies Kielder, whose extensive young coniferous plantations form Britain's largest forest. Here moorland hill farms have been lost in one of the greatest changes seen in the countryside for many years and brought about by the Forestry Commission's creation of the Border National Forest Park.

THOUGHTS ON CAREERS EXHIBITION

"That wasn't the tablet machine I saw at the careers' exhibition."

Retail recruits ? . . . I hae ma doots
Seitz and sintered-glass filtration ? Tablet-making demonstration ?
Pupils with their G.C.E. may prefer the factory !
Hospital ? At those wages ? Folly ! Youth today must have its lolly.
Roots and leaves imply stagnation; and N.H.S.—retail frustration !

The CHEMIST AND DRUGGIST

For Retailer, Wholesaler and Manufacturer

ESTABLISHED 1859

Published weekly at

28 Essex Street, Strand, London, W.C.2

TELEGRAMS: "CHEMICUS ESTRAND, LONDON"

TELEPHONE CENTRAL 6565

Back to normal, yet still Very Special

THE 1960 Annual Special Issue is distinguished from its immediate predecessor in two important respects. In the first place it appears on the date planned (last year the A.S.I. was postponed until September owing to a dispute within the printing industry). Secondly it is not, like that of 1959, additional to the weekly series of fifty-two issues, but reverts to the pattern on which it was introduced so many years ago: that of an "ordinary" issue containing the news of the week but rendered special by the nature, quality and amount of its other contents.

Those contents have never been of one kind. The main intention is to interest and entertain, but something of immediate practical utility and value is usually a dominant feature. This year it is a second supplement to the *C. & D.* Tablet and Capsule Identification Guide. As is pointed out in the introductory text on p. 763, to bring the guide up to date may not always be a realisable proposition, but the number of tablets distinctive in colour or marking that have been put on the market since the previous supplement (1958) has not in fact proved overwhelming, and we are encouraged to think that further supplements may be practicable before the whole thing gets out of hand.

Also of an extremely practical character is an article on photographing a window display. Mr. Lawson in writing it both draws on experience—for he was once an assistant in a retail shop—and also demonstrates his versatility, for his speciality today is photomicrography, a field in which he has an enviable reputation.

History once again looms large in the A.S.I. It would not be unreasonable to claim that, over the years, the series has presented more first-hand material on historical aspects of the craft than has appeared in any other comparable publication. Again, as in the past, some of the illustrations (not as many as we should have liked) are in colour, and Professor MacKinney, whose article they illustrate, has cast a wide net to gather material for the intriguing theme he expounds.

A major contribution to pharmaceutical record, too, is the first instalment of Mr. Shields's history of the British Pharmaceutical Conference, for which, fortunately, we were able to find from contemporary issues of the *C. & D.* a number of pen sketches, excellent alike for their beauty of draughtsmanship and penetrating portrayal of character.

Two well-known businesses in the wholesale trade—one in the North and one in the South—provide material for minor historical studies that will call for future supplements, since both companies seem well set for long and successful extensions to their careers.

From history we turn to geography to deal—all too inadequately—with this year's centre for the British Pharmaceutical Conference. To the true lover of pharmacy the visit to Newcastle, scene of the first Conference, will be almost a pilgrimage of devotion for its own sake, much enriched for good measure with a wealth of civic history, scenic beauty and pharmaceutical distinction.

The remainder of the special articles, assorted though they are, cater for a normal human interest in one's own affairs. Mr. Crellin helps pharmacists to see themselves as others have written about them; and a pharmacist who is perhaps prudent to preserve his anonymity gives revelations of a partly mis-spent youth that finally passed into a respectable adulthood. Mr. Matthews follows his reappraisal of Galen in a previous A.S.I. with an equally penetrating study of Avicenna. Other illustrated features of the issue will, we hope, combine pleasure with instruction.

We have been writing of editorial contents, but what makes the greatest impact on a person turning over the pages is the wealth of advertisements the issue contains. To refer to pages that speak so well for themselves is hardly necessary, beyond saying that, whether in colour or monochrome, they are as attractive, interesting and purposeful as ever.

Onward from Galen

EVERY pharmacist is vaguely aware, as a part of his cultural background, that earthworms, ants' eggs and oil of scorpions were once part of the materia medica. Many if asked how those articles came to be taken into stock by the apothecary or alchemist of the period would be even more vague. He might be forgiven if he suggested that they were furtively collected by the apothecary himself when nobody was looking. That there was any genuine commerce in those egregious items seems improbable. Yet Mr. Sidney Raine, Moseley, Birmingham, a collector of letters of historical interest, recently produced from his collection a letter to Sir George Fleming (Bishop of Carlisle, 1734–47) from his sister Mrs. Mary Fleming, in London, in which the purchase and dispatch of twenty-four vipers is recorded in circumstantial detail. The letter, dated October 8, 1745, reads:—

MY LORD,—I, last Friday, sent two dosen of vipers, as directed by Doctor Wilmot; they are dryed, believing you had none with you that durst kill the live ones, but if you would rather chuse the live ones, lett me know, and I will send the next so. The doctor directed me to the same person that gott them for the Bishop of York: they are to be used as the live ones, only broke to pieces. The Doctor says he advises our own vipers much before those that come from abroad, as ours are in full vigour, and those are quite spent Out of six dosen that came for the Bishop of York, there was little above a dosen that can be used, and those not good.———I hope they will set you quite to rights———I thank you for your accounts of how things go with you; we know of nothing here, one day they tell a thing as certain truth, the next they quite contradict it.———I shall long for a good account of my cousins, who I hear are all with child. I am your Lordship's Ever affecte. Sister and humble Servant,

Mary Fleming.

1 dosen of vipers	0 - 18 - 0
box and porter	01 - 6
	0 - 19 - 6

I have remaining of your Lordship's money in my hand one pound seventeen shillings and sixpence.

One wonders whether the repeated order that was invited was received. Perhaps if the dried ones, "broke to pieces" but in full vigour at the time they were collected, failed to bring about the desired result, the next step was a kill or cure effort with the live vipers.

TABLET IDENTIFICATION 1960

Supplement to the C. & D. Tablet and Capsule Identification Guide

INTRODUCED as a feature of the 1956 Annual Special Issue, the *C. & D.* Tablet and Capsule Identification Chart quickly established itself in demand among hospital and retail pharmacists. Before long the demand had widened to take in many general medical practitioners and police departments as, by indirect introduction (for it was publicised exclusively to pharmacists) the Chart came to their notice.

It is in the nature of such a publication that, though nothing can destroy its usefulness in respect of those tablets it depicts, every new coloured, embossed or engraved tablet that comes on to the market renders the Chart to that extent obsolete. By periodical supplements something may be done to keep abreast of the changing situation, and the first such supplement appeared in 1958. Reprinted, it was issued with the originals as a set of cards and as a booklet available for separate purchase. At the time it was produced its compilers were specially conscious, by reason of the then newly given permission to manufacturers to issue certain pharmacopœial tablets in distinctive colours, that the time might well come when the number of coloured tablets in circulation would involve too much overlapping to enable the Guide to provide a useful means of narrowing down sufficiently the range of "possibles." Admittedly some tablets go out of production as other tablets emerge but, from the point of view of the Chart's purpose in life, that does not solve problems for the publishers. None can say how long tablets once prescribed or purchased remain in private hands, and so long as even one remains it may still, even if it has outlived its therapeutic usefulness, cause trouble by being swallowed by a child.

The fact that a second supplement is now appearing may be taken as evidence that, in the view of the producers of the Chart, it continues to make a useful contribution towards solving problems which, infrequent as one hopes they are, are pressingly urgent and acute when they arise.

Once again it is proposed to make the supplement available as cards, etc., along with reprints of the earlier set (which have now been out of print for some time). Details of format and price will be announced later.

We take the opportunity to put on record the ready co-operation of the manufacturers, to whom we offer our thanks as producers, adding the implied gratitude of all users of the Chart.

KEY TO TABLETS ILLUSTRATED ON OPPOSITE PAGE

60A Prozine WYETH.
B Drinamyl strength 1 Spansule SKF.
C Drinamyl strength 2 Spansule SKF.
D Phenobarbitone gr. 1 Spansule SKF.
E Phenobarbitone gr. 1½ Spansule SKF.
F Tuinal 100-mgm. LILLY.
G Tuinal 200-mgm. LILLY.
H Amesec Pulvules LILLY.
I Histryl 2·5-mgm. Spansule SKF.
J Histryl 5-mgm. Spansule SKF.
K Rovamycin 250-mgm. MB.
L Cycloserine 250-mgm. LILLY.
61A Ledermycin 150-mgm. LED.
B Dexedrine 10-mgm. Spansule SKF.
C Dexedrine 15-mgm. Spansule SKF.
D Steladex Spansule SKF.
E Gresuton FBA.
F Capsules Gabail AFD.
G Dekrasil CROOKES.
H Durophet 12½ RIKER.
I Senokot WESTMINSTER.
J Overones BGP.
K Phos-Qu-Ron BR, PAR.
L Testrones BGP.
62A Tral Filmtab, ABB.
B T 421 MODKEM.
C Altafur 250-mgm. SKF.
D Nebrinal WANDER.
E Secergan ASTRAPHARM
F Butisol 30-mgm. MCNEILL.
G Pabalate with hydrocortisone ROBINS.
H Telmid 100-mgm. LILLY.
I Norflex RIKER.
J Butisol 15-mgm. MCNEILL.
K Stelazine 1-mgm. SKF.
L Stelazine 5-mgm. SKF.
63A Vallergan 10-mgm. MB.
B Warfarin sodium 3-mgm. WB.
C Marevan 3-mgm. EVANS.
D Mylodex-1 BR, PAR.
E Mylodex-A BR, PAR.
F Florinef 0·1-mgm. SQUIBB.
G Vespral 10-mgm. SQUIBB.
H Parafon MCNEILL.
I Distivit 20-microgm. DC(B)L.
J Distivit 100-microgm. DC(B)L.
K Ledercort 2-mgm. LED.
L Niamid 25-mgm. HARVEY.
64A Noradran Bitabs (supplied as composite pack with white tablets) NORMA.
B Ismelin 25-mgm. CIBA.
C Coscopin EVANS.
D Etophylate P.P. RONA.
E Panets WB.
F Butisol 100-mgm. MCNEILL.
G Warfarin sodium 5-mgm. WB.
H Florinef 1-mgm. SQUIBB.
I Marevan 5-mgm. EVANS.
J V-Cil-K 125-mgm. LILLY.
K V-Cil-K 250-mgm. LILLY.
L Tyrimide 5-mgm. SKF.
65A Elestol FBA.
B Sustac gr. 1/10 PHARMAX.
C Sustac gr. 1/25 PHARMAX.
D Neostol AFD.
E Amphactil MB.
F Phenobarbitone gr. ½ MODKEM.
G Mornidine 5-mgm. SEARLE.
H Pabalate sodium free ROBINS.
I Thionaiodine V AFD.
J Butibel MCNEILL.
K Erythrocin Filmtab, 100-mgm. ABB.
L Erythrocin Filmtab, 250-mgm. ABB.
66A Nidoxital ORTHO.
B Miltown 200-mgm. LED.
C Miltown 400-mgm. LED.
D Ferlucon EVANS.
E Ferromyn 'B' CALMIC.
F Tetracyn SF (hard) PFIZER.
G Iberol Filmtab, ABB.
H Dayalets ABB.
I Prepalin GLAXO.
J Adexolin GLAXO.
K Dayamin ABB.
L Millophyline DALES.
67A Rautrax improved SQUIBB.
B Terramycin SF (hard) PFIZER.
C Ilidar 25-mgm. ROCHE.
D Aquavit ASTRAPHARM.
E Vita-E Gels 400 i.u. BIOGLAN.
F Muripsin NORGINE.
G Distolyt DC(B)L.
H Nardil WARNER.
I Villescon PFIZER.
J Cafergot Q SANDOZ.
K Riflavin BR, PAR.
L Steclin 250-mgm. SQUIBB.
68A Noradran Bitabs Nocte (supplied as composite pack with white tablets) NORMA.
B Nilergex S.A. 12-mgm. ICI.
C Di-Paralene ABB.
D Delta-Butazolidin 50-mgm. GEIGY.
E Tofranil 25-mgm. GEIGY.
F Primodos PHARMETH.
G Fabahistin FBA.
H Rovigon ROCHE.
I Nilergex 4-mgm. ICI.
J Juvel VIT.
K Tyodac DALES.
L Pleniron KERFOOT.
69A CVK Compocillin V Filmtab, 250-mgm. ABB.
B Vita-E Gels 75 i.u. BIOGLAN.
C Vita-E Gels 200 i.u. BIOGLAN.
D Valgraine DC(B)L.
E Varidase Buccal LED.
F Broxil 125-mgm. BR.
G Broxil 250-mgm. BR.
H Triominic WANDER.
I Hydrenox BOOTS.
J Albamycin T. UPJOHN.
K Dextro-amphetamine sulphate 5·0-mgm. MODKEM.
L Penvelets ABB.
70A Darenthin 200-mgm. BW.
B Darenthin 50-mgm. BW.
C CIBA-1906 CIBA.
D Warfarin sodium 20-mgm. WB.
E Nitoman 25-mgm. ROCHE.
F Vespral 25-mgm. SQUIBB.
G Corangil ALLIED.
H Di-Ademil-K SQUIBB.
I Resotren FBA.
J Thyroid gr. 1 MODKEM.
K Sulphamezathine lozenges ICI.
L Midicel PD.
71A Geriden DENVER.
B Aldactone SEARLE.
C Pro-Banthine with Dartalan SEARLE.
D Albamycin G.U. UPJOHN.
E Niamid 100-mgm. HARVEY.
F Marsilid 25-mgm. ROCHE.
G Marplan 10-mgm. ROCHE.

It is clear from the records that Chinese, Hindu, Greek and other oriental peoples used tranquillisers—possibly even anaesthetics—in the centuries before Christ. Professor MacKinney here makes an appraisal of the extent of their early use.

TRANQUILLISERS BEFORE THE MODERN ERA

L. C. MacKINNEY

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ALDOUS Huxley, in "The Doors of Perception," makes the following observation concerning man's eternal search for escape from reality:

"Most men and women lead lives, at the worst so painful, and at the best so monotonous, poor and limited, that the urge to escape . . . has always been one of the principal appetites of the soul. . . . All the vegetable sedatives and narcotics, all the euphorics that grow on trees, the hallucinogens that ripen in berries or can be squeezed from roots—all, without exception, have been known and systematically used by human beings from time immemorial. And to these natural modifiers of consciousness modern science has added its quota of synthetics—chloral, for example, and benzedrine, the bromides and the barbiturates. Most of these modifiers of consciousness cannot now be taken except under doctor's orders. . . . For unrestricted use the West has permitted only alcohol and tobacco. . . ."

Dr. Fredrick Wellman, a retired M.D. in the present writer's home village of Chapel Hill, recently expressed the same long-range idea, but in somewhat more technical terms, organised a little frivolously into the following jingle:

"The ataraxic (i.e., undisturbed) age began
Somewhere with prehistoric man.
C_2H_5OH, I think,
Came first, as a consoling drink.
And, as I read through ancient lore,
Such tranquillisers, more and more,
Leap from the Latin page, and Greek.
Ah, the lost solace man must seek. . . ."

At the time I received, and read on to the end, that humorous piece of pharmaceutical verse, I chanced to be perusing Dioscorides' famous compilation of ancient materia medica. Noting that Wellman, in his gleanings "from Latin page, and Greek," made no mention of Dioscorides, I obeyed an impulse and, in an hour or so of leisure, drafted "An Open Letter from Pedanius Dioscorides to Fredericus Sanushomo, dictated to his faithful scribe, Laurentius MacKinnicus." Under the title, "Tranquillitas," this pseudo-Dioscorides protested against Wellman's callous disregard for one of the greatest works ever written on materia medica. The editor of the *Bulletin of the University of North Carolina Medical School*, in which Wellman's poem had appeared, illustrated and published the open letter. That strengthened my interest in early tranquillisers, eventually resulting in the present historical survey of men's efforts at tranquillisation.

What are the historic beginnings of tranquillisers? If we delve deeper than generalisations such as those quoted above from Huxley and Wellman, we find little specific data prior to the era of the Greeks. For prehistoric man there is only circumstantial evidence. Doubtless he, like primitive men existing today, used alcoholic intoxicants and other forms of tranquillisers, perhaps even anæsthetics for trephining operations. Oriental traditions of hemp-hashish (the classical *Cannabis sativa*), which usually are dated at sometime during the centuries Before Christ, may have been carry-overs from prehistoric times. However that may be, it is clear that Chinese, Hindu, Greek and other mid-Eastern and Far-eastern peoples of the B.C. centuries made use of tranquillisers, and possibly of anæsthetics. Hemp products (now identified with bhang, hashish, *Cannabis sativa* and marihuana) seem to have been favourites of the ancient orientals; mandrake (mandragora) was more popular with occidentals. Both were used in potions and as inhalants. Their application to surgical anæsthesia is somewhat uncertain.

With the Graeco-Roman era, written evidences become more plentiful. Mushrooms (*Agarica*) were a recognised item in classical pharmacopœias. Wine was common as a mild sedative: Dioscorides listed many varieties (1). A more drastically potent tranquillising potion was hemlock (*Conium maculatum*, or *Cicuta maculata-virosa*). Hemlock was used permanently to sedate and silence Socrates. It could serve like a modern overdose of sleeping pills. Less tragic and potent was the tranquilliser which Greek legend has Aphrodite employ to lull her grief and repress her desires after the death of Adonis, she threw herself on a bed of lettuce (*Lactuca silvatica*) (2). Galen also used lettuce; he ate it to suppress a different kind of excitement from that of Aphro-

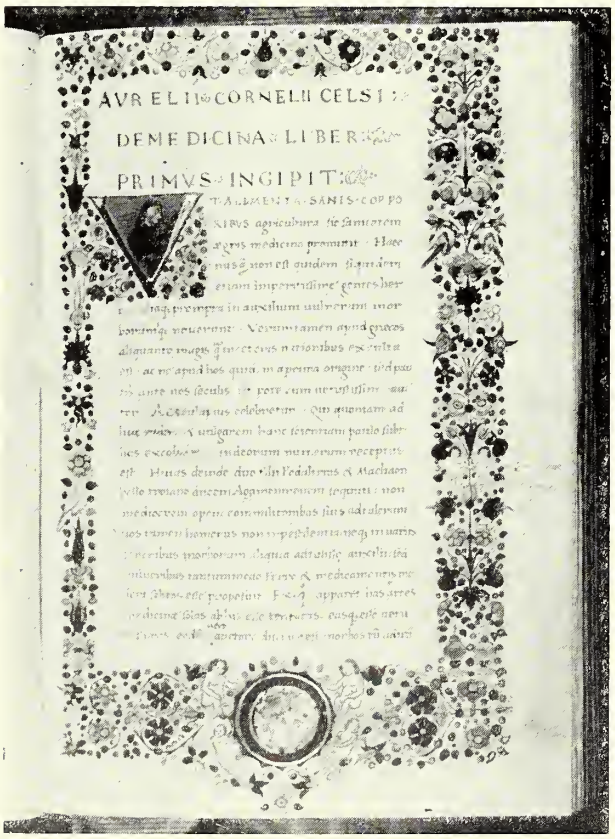
1. Dioscorides, from a thirteenth-century manuscript at Vienna.

*2. Lettuce (*Lactuca silvatica*) plant, from a thirteenth-century Laurentian manuscript at Florence.*

4. Treating insomnia with poppy juice on the forehead and by fanning, from a thirteenth-century Laurentian manuscript at Florence.

dite—the kind evoked by excessive study. However, he did disapprove specifically of what he called "carotic" (*i.e.*, stupefier) tranquillisers.

Like their modern successors, medical men in ancient, and also in mediæval, times often cautioned against the use of tranquillisers such as poppy, mulberry, henbane and especially mandragora. In the first century Celsus, a famous Roman writer (3), mentioned various tranquillisers, noting that "some endeavour to induce sleep by potions of poppy or henbane;" some "smear balsam or sycamine on the forehead," some "sponge the head or face with poppy juice" (4), some "put mandrake fruit under the pillow." But, Celsus added, those were "said to be of no benefit, often producing lethargy." He also described a dozen kinds of anodyne sleeping pills, compounded from the above-mentioned tranquillising herbs. These, however, were to be used only in case of what he called "overwhelming necessity." The same cautious attitude prevailed in late-Roman and mediæval times. For example, four centuries later (circa 500) Caelius Aurellanus discouraged the use of "anodynes" even for toothache, suggesting, however, the inhalation of "bitumen sprinkled with wine and placed over burning coals" (5). Ten centuries later, Guy of Chauliac was still warning French physicians against "opium sedatives and stupifyers which do not truly help . . . and can even kill." Even he, however, had no objection to pacifying violent mental patients such as lunatics (*i.e.*, "moon-struck") by fastening a tranquillising sprig of peony around their necks (6).

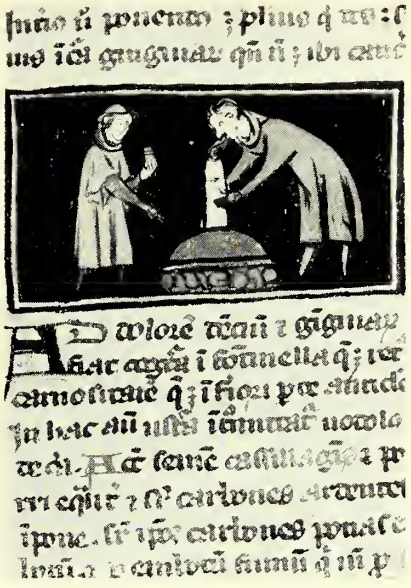


3. Title-page of Celsus's book "De Medicina," Laurentian manuscript, Florence, fifteenth-century.

"Miracle Drug" of the Middle Ages

Nothing, it seems, could dim the popularity of the mandrake tranquilliser. It recurs so often in medical writings and illustrations that it might be called the "miracle drug" of ancient and mediæval times. A survey of traditional types of mandrake illustrations in manuscripts serves to illustrate the point. The earliest examples are found in the famous sixth-century Vienna Dioscorides, a manuscript copy of an ancient Greek scroll, done about A.D. 500 in Constantinople for the daughter of a late Western emperor. One full-page picture portrays the mythical discovery of mandrake. An almost exact copy of that picture is found in a fifteenth-century Vatican manuscript; in it can be seen more clearly the goddess of discovery handing the mandrake plant to Dioscorides. Below the plant, tied to it, is a dying dog (7). Many miniatures show the dog, while yet alive, uprooting the plant (8). The dog was used, according to tradition, because the plant when uprooted shrieked loudly, driving hearers mad; therefore a dog was tied to the plant-stalk and offered food to make him move away, thus uprooting it. Meanwhile bystanders covered their ears or blew horns so as to escape madness. Two more co-ordinate pictures from the Vienna and Vatican manuscripts show the goddess holding the plant while Dioscorides writes a description and the artist sketches.

Many later manuscripts describe and picture those traditional scenes: the dog tugging at the rope tied around his



5. An inhalation for the relief of tooth-ache. From a fourteenth-century manuscript at Montpellier.

6. A sprig of peony around a lunatic's neck. From a thirteenth-century manuscript at Vienna.

13. Tranquillising a baby with artemisia fumes. From a thirteenth-century manuscript at Vienna.

neck and the plant, etc. The writer has examples from every century from the ninth to the sixteenth inclusive. In some cases a keeper holds, or tosses food to, the dog; rarely men are shown digging round the roots, and rarely also the dog is pictured as dead or dying after completing his mission. In one case a bystander blows a horn, in another he covers his ears. Two rather complicated miniatures show first the usual procedure then, below it as a sort of epilogue, the plant and dog (now dead) on the ground side by side.

Mandrake Anthropomorphism

Equally interesting in the mandrake tradition is the anthropomorphic representation of the plant. From the earliest (Vienna) miniatures onward, the plant roots and branches are shown elongated and divided at the ends to suggest human legs and arms. Heads are not always definitely human; in most pre-twelfth-century miniatures the base of the neck sprouts into a circle of large leaves, often with fruit. Thereafter most representations clearly depict heads and faces, with the leaf corona. Another realistic anatomical feature, in both early and late examples, is the separate portrayal of the female mandragora, usually with prominent bosoms, and occasionally also genitals (10). Male genitals, especially in later examples, are prominent (9). In fifteenth-century miniatures even hands and feet become almost completely human (11). A final realistic feature appears in a fifteenth-century mandrake pictured with beautiful realism simply as a plant (12). It is matched only in a thirteenth-century Arab Dioscorides.

A Heritage from Greece

The mediæval mandrake tradition was an obvious heritage from Graeco-Roman herbal lore. Homer, sometimes associated with medicine, may have referred to mandrake in the Iliad, where Patroclus cut an arrow from Eurypylus' thigh, then "applied a bitter root, a root that kills pain; this stopped the pangs, the wound dried, the bleeding ceased." Centuries later, in Nero's Rome, Dioscorides mentioned mandrake, both as a soporific and an anæsthetic; the root-rind, he said, taken in wine, is good for those "about to be cut or cauterised, so that, overcome with sleep, they feel no pain for three or four hours." A few years later Pliny the Elder, in his "Natural History," recommended mandrake juice for snake bite; also to anæsthetise "before incisions

9. Male mandrake. From an eleventh-century manuscript in the Ashmolean museum at Oxford.

10. Female mandrake. From the same manuscript as illustration 9.

11. While a dog uproots a mandrake, a man closes his ears. From a sixteenth-century print at London.

12. Mandrake root and leaves. From a fifteenth-century manuscript at Venice.

or punctures," and he added " for some persons the odour is sufficient to produce sleep." This, I believe, is the earliest known record of inhaling an anæsthetic for surgery.

With this recommendation of mandrake inhaled by a patient to put him to sleep for several hours for a surgical operation, we turn to some amazing examples of early tranquillisers, one of which was the famous *Spongia soporifera,* often referred to in late mediæval surgical treatises. Celsus wrote, apropos of first-century operations:

> " [The ideal surgeon] is unmoved by the patient's suffering . . ., proceeding as if the cries of pain caused him no emotion. . . ." At about the same time, however, Dioscorides and Pliny mentioned a method of anæsthesia by the external, local application of ground Memphis stone. Dioscorides wrote that Memphis stone was a substance found in Egypt, where " it was said to be smeared on parts of the body that are to be cut or cauterised, numbing them harmlessly so that the pain is not felt."

It should be noted that that usage (which Pliny seems to have copied verbatim from Dioscorides) was reported as of Egypt, where it was " said " to have been employed. It seems likely that tranquillisers in ancient times were used chiefly in liquid form with wine, and rarely by inhaling or local application. Their use for surgical operations is not proved in any specific case, but repeated references in non-surgical treatises create a high probability that they were used. I believe that they were so ineffective that patients like those mentioned by Celsus, still writhed with pain. For example Plutarch, writing shortly after Celsus, told how the famous Roman general Marius, undergoing a leg operation for varicose veins, refused to be anæsthetised or tied down. He refused, however, to have the other leg operated on, remarking that the cure was worse than the ailment.

Tranquillisers were known also in the non-classical lands of ancient and mediæval times. In most regions and centuries of the pre-modern world for which we have medical records, the usages resemble those of the Graeco-Romans. In the ancient and mediæval Orient, tranquillising drugs were common, while surgical anæsthetics seem to have been almost non-existent, save in legends. For example, the only known account of an anæsthetic in a Cæsarean operation comes from a tenth-century, non-medical work, the story of Rustam. He was said to have been cut out of the body of his mother after she had been put under the influence of a drug dropped by an eagle. More medically acceptable, but primitively amusing, is the account of an inhalant, described in Elgood's " Medical History of Persia." Sheep flesh and braised seed of henbane were placed in a jar, covered with horse dung, and left until worms generated. The worms were removed, allowed to dry, powdered with poppy seed (two parts worm to one part poppy), and then used as a tranquillising inhalant. There are those who believe that the sponge applied to Christ on the cross contained some sort of an anodyne. In far-away China a third-century surgeon was said to have used both a powder dissolved in wine, and a hemp inhalant for surgical anæsthesia, and a Hindu ruler (sixth century) is reputed to have inhaled hemp fumes for a trephining operation. It seems likely that those early peoples of the near and far East, who talked and wrote about soporifics, must have made some use of them in surgery, as well as for non-medical tranquillising.

Much Evidence of Anæsthetics

So far as the mediæval Occident is concerned one is surprised to find much evidence of anæsthetics in the post-classical period. For example, a fourth-century French bishop wrote that " if part of the body must be cut away, the soul can be lulled to sleep by drugs which overcome the pain and produce in the mind a death-like forgetfulness of its power of feeling; then limbs can be cut off without pain." A similar, but more scientific, passage appears in a pharmaceutical handbook compiled in the same century by an unknown writer called pseudo-Apuleius. It reads thus: " If a limb is to be mutilated, burned, or sawed, drink half an ounce of mandrake-wine . . . [then] the member can be cut off without pain or feeling."

A ninth-century archbishop in the Rhinelands cited that in his encyclopædia (adding piously) " It is comparable to the virtues of the saints." Like most " dark-age " anæsthetics, it was doubtless a modification of a Graeco-Roman prescription.

Inhalants and a Baby Tranquilliser

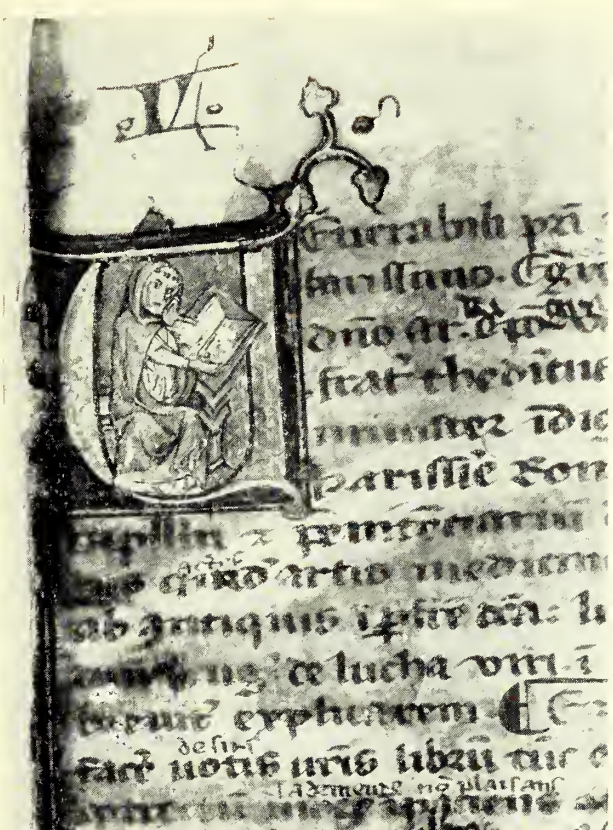
More interesting are the inhalants, compounded from mandrake, henbane, hemlock and poppy which appeared at that time; among them is a baby tranquilliser (13). A new form, the famous soporific sponge, is often attributed to Salernitans at a *Civitas Hippocratica* that was said to have survived, after the fall of Rome, in Southern Italy. Evidence published over thirty-five years ago, however, at the Leipzig Institute of the History of Medicine, proves that soporific sponges were recommended for surgical operations elsewhere in Europe, and as early as the ninth century. The evidence is found in almost identical excerpts from a ninth-century Monte Cassino manuscript and from a twelfth-century Bamberg manuscript (published by Karl Sudhoff and Henry Sigerist). They reveal the anæsthetic sponge, in the following prescriptional detail.

> " A hypnotic aid, that is, a soporific, for those about to be healed by surgery, so that, being asleep they will not feel the pain. Compound it as follows: seed of thebaic poppy, 1 ounce; juice of mandrake leaves, 8 ounces; juice of hemlock and henbane, 3 ounces; all put together with water sufficient to make a juice. Then you soak up the juice in a coarse dry sponge and dry it well. When you want to use the sponge, soak it for an hour and warm it and place it on the [patient's] nostrils so as to take away his very spirit until he sleeps. And when you wish to wake him take another sponge soaked in warm vinegar; place it on his nostrils and you will end his sleep."

Sudhoff suggested that that prescription originated in Hellenistic Alexandria, was revived after a thousand years, and served as the source for the late mediæval anæsthetic sponges that were introduced at Bologna by surgeons some time before the thirteenth century. However, the textual record as it stands reflects surprising credit on monk-medics or scribes of the Dark Ages, who were its inventors or who were smart enough to borrow a good prescription from the ancients and improve on it.

Did anyone, however, use the sponge that those early writers described in such personalised detail: *viz.,* " You soak it," " When you want to use it," etc.? Some scholars have doubts, and I know of no specific record of actual use. There are, of course, almost no records of any surgery surviving from so early a date, and those extant are hopelessly brief. My guess is that someone, somewhere, at some time during those pain-ridden centuries, must have tried it out, probably with disappointing results. Detailed investigation, made by one of Dr. Henry Sigerist's former students, Marguerite Bauer, included the actual testing of various of the ancient and mediæval anæsthetics. She concluded that none of them could have been effective for surgical operations. That controverts the more optimistic experiments of Benjamin Richardson a half-century ago. Nevertheless, as in the case of the Graeco-Romans and Orientals, it seems likely that people who wrote so much about anæsthetics must have tried them out. At any rate the record for the mediæval centuries is clear. Writings continued about anæsthetics, both the ancient mandrake-poppy-henbane prescription and the new sponge applicator.

In all outstanding Western centres, the above-quoted, ninth-century sponge prescription seems to have been copied and recopied. It occurs in a twelfth-century pharmaceutical handbook compiled by a supposed Salernitan named Nicholas. Hugh, a surgeon of Bologna, a century later, knew it; his son, Fra Theodore (14) repeated it in his *Chirurgia,* under the title " a surgical soporific compounded according to Master Hugh." Gilbert, an Englishman at Montpellier in the late thirteenth century, passed on the prescription. A century later, however, the famous Guy of Chauliac (15), who studied and taught both at Bologna and in France, seemed uninterested in surgical anæsthetics. Modern writers



14. Fra Theodore writing. From a fourteenth-century manuscript at Paris.

often optimistically cite his "use" of the soporific sponge. But, in his *Grande Chirurgie* he made only the following slighting reference to it, at the end of a discussion of an amputation: "Some, such as Theodore, speak of medicines which put one to sleep so that he will not feel the incision." This is followed by a list of the usual ingredients, but without indication of specific amounts, and with no reference to its use.

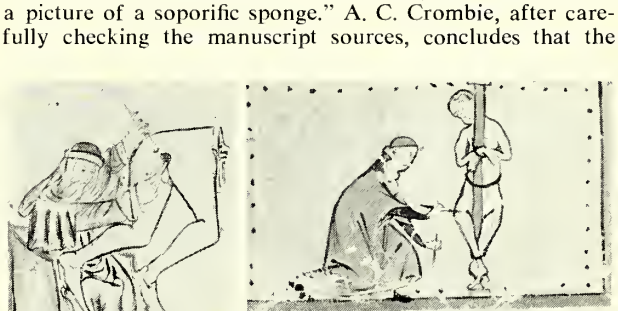
An Unsolved Question

And so we still face the question: did they use it? Some historians believe that anæsthetics were disregarded during the late Middle Ages and until the discovery of ether in the sixteenth century. Following in the paths of other curious scholars, I have searched the surgical writings of the Italian and French greats of mediæval times, looking in vain for sure indications that they actually used anæsthetics. There is nothing but the recurring advice: when about to cauterise, or cut, or saw a man, give him a sniff or a drink of mandrake, etc. The remarkable fourteenth-century Flemish surgeon, Jan Yperman, approved tranquillisers and anæsthetics, but his frequent case reports contain no convincing evidence. The slightly later, and equally notable English surgeon, John of Arderne (16), recommended the traditional mandrake prescription as an "ointment, with which, if any man be anointed, he can be cut in any part of his body without feeling or pain. . . . Anoint the forehead, pulses, temples, armpits, palms of hands and soles of feet, and immediately the patient will sleep so soundly that he will not feel the cutting." Arderne also recommended the use of the prescription in a potion, cautioning that "it is well to tweak the nose, pinch the cheeks, or pluck the beard of such a sleeper to quicken his spirits lest he sleep too deeply." Can it be that John of Arderne never used anæsthetics in his formidable fistula operations? He must have done so.

No Sure Record

Nevertheless, in the imaginary courtroom at which historians are ever conscious of the necessity of something more than circumstantial evidence to prove their case, I am compelled to admit that I have "no sure record of a single operation under anæsthesia." I have hoped to find specific evidence in the medical miniatures from mediæval manuscripts, of which I have accumulated about 4,000 examples. Surgical manuscripts have hundreds of pictures of operations and cauterisations. Some of them show surgeons and their attendants with buckets, jars, bowls, pieces of cloth, etc. Could not some of these utensils be evidence of the use of anæsthetic potions or soporific sponges?

So far my conclusions are negative, and two other manuscripts specialists agree. Otto Bettmann, author of the "Pictorial History of Medicine," whose archives contain thousands of illustrations from manuscripts, has "never seen a picture of a soporific sponge." A. C. Crombie, after carefully checking the manuscript sources, concludes that the



16 and 17. John of Arderne operating on fistula. From a fifteenth-century Sloane manuscript at the British Museum, London. A cautery victim tied to a pole. From a fourteenth-century manuscript at Montpellier.

illustrations (from the British Museum Sloane manuscript, 1977) captioned as *Spongia soporifera* in plate 9 of his *Augustine to Galileo,* is not soporific anæsthesia but merely the sponging of a patient's face. Those negative conclusions are corroborated by the many manuscript illustrations of patients tied down or held down, or both, for operations or for cauterisations (17).

The only favourable evidence comes from several cautery pictures (in a manuscript of about 1100) showing bowls (perhaps full of anæsthetic potions) placed close to the patients' mouths, in some cases being presented to the patient by the doctor. Two manuscripts of about the same date depict patients with round white objects in the mouth, apparently placed there by the hand of an attendant (or is it the hand of God?). That might possibly be an orally administered anæsthetic sponge or capsule. Although such evidence is highly circumstantial, those illustrations were made at a time when surgeons of Bologna, Salerno, etc., were writing about surgical anæsthetics.

To summarise, we may be sure that ancient and mediæval folk, both Oriental and Occidental, were continuing to use many kinds of tranquillisers: mushrooms (perhaps of the hallucinatory variety), poppy, henbane and of course mandrake (especially in the Occident), and hashish (especially in the Orient). Sometimes they drank their tranquillisers (as we do our alcohol), sometimes they inhaled them (as we do our tobacco and marihuana), sometimes they took them in pill form (as we do our soporifics).

The author gratefully acknowledges valuable co-operation from the authorities at, and permission to use material from original sources in, museums and libraries at the Vatican; Florence; Venice; Vienna; Montpellier; Paris; London; and Oxford.

DENMARK'S PHARMACEUTICAL INDUSTRY

Using the one domestic raw material available—animal organs from the country's large bacon industry—Denmark, scene of the International Pharmaceutical Federation's 1960 Assembly, August 29 to September 2, has built up in organotherapeutic preparations a thriving business which still forms a considerable part of the pharmaceutical industry's manufacturing and export programme

IN late August a large contingent of pharmacists will converge on Denmark to attend the eighteenth general assembly of the International Pharmaceutical Federation and the twentieth International Congress of Pharmaceutical Sciences in Copenhagen. The Danes being well known for their generous hospitality, the visitors may be sure of a warm welcome.

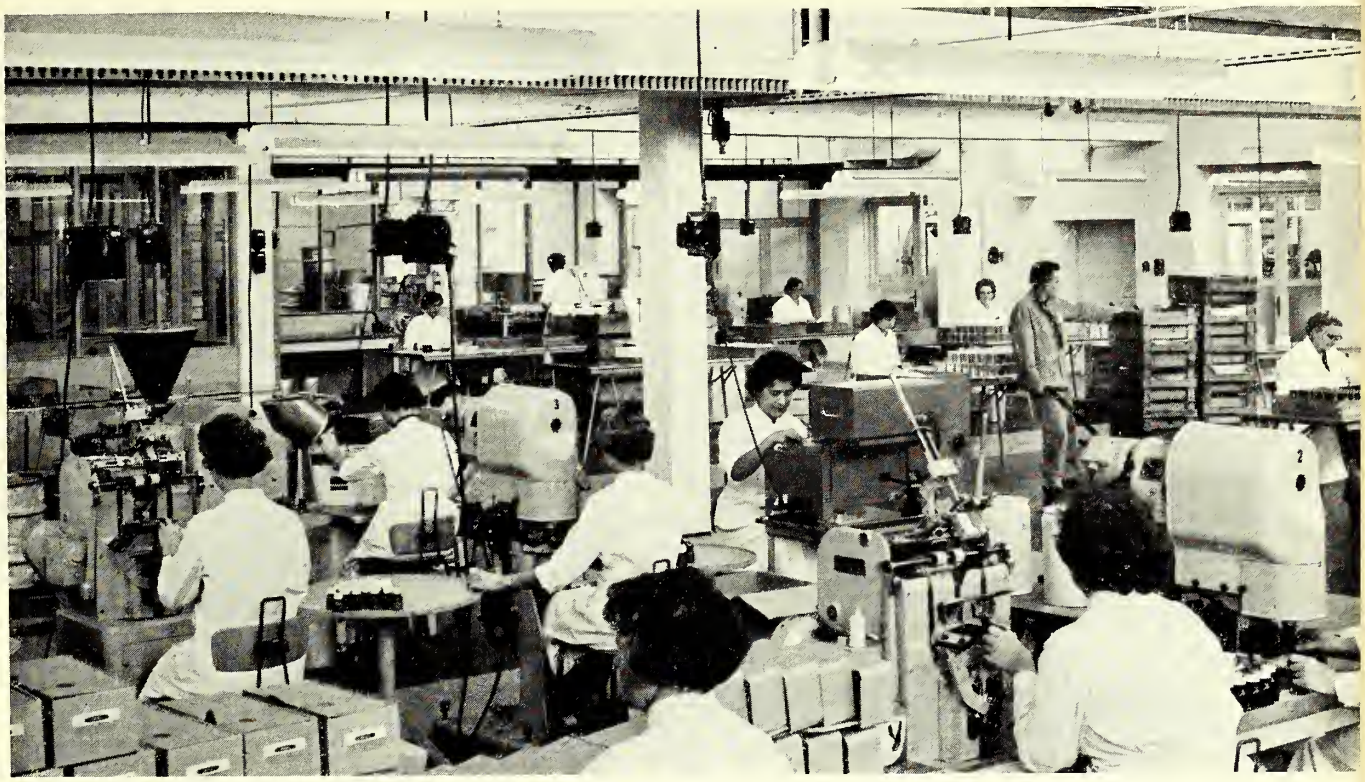
A section of the department for injection solutions at A/S Ferrosan.

Denmark, a small country—about twice the size of Wales and with a population of just over four millions—has a pharmaceutical industry small by international standards but it is rapidly growing and is extremely export-minded. From modest beginnings about fifty years ago, the pharmaceutical manufacturers of the country now account for a considerable proportion of the total chemical industry of the country. Their current production amounts to nearly 200 million Danish crowns (£10 millions sterling) a year, and of that total about two-thirds comes from exports.

Successful with Exports

As a member of the European Free Trade Association Denmark will, in a few days' time, be reducing by 20 per cent. her import quotas and tariffs on manufactured goods. So far as pharmaceutical products are concerned that will make little difference to the Danish importer, because there is no duty levied on pharmaceuticals at present. On the other side of the picture, however, the Danish industry will face a gradually decreasing wall of tariffs for its exports to the United Kingdom, where present rates are high. Danish manufacturers realise that, in the first few years, the reduction in tariff rates will not be sufficient to make much difference to their selling in the United Kingdom market or other markets where the industry is similarly well established and competitive. For that reason they are concentrating their energies in the lesser developed countries, where there is little or no competition from domestic production. That they are extremely successful in the export field is shown by the figures given which work out at £1·7 per head of population (against the U.K's £1 per head).

With one important exception Denmark possesses little by way of raw materials for the drug industry. Nor has it had the advantage of an established synthetic chemical industry such as dyestuffs, which has proved such a valuable springboard for the development of new medicaments in other countries, especially Switzerland or Germany. As an agricultural country, however, Denmark has a slaughter-



Filling assembly line in packaging department of A/S Ferrosan

ing industry which has been able to supply Danish pharmaceutical manufacturers with considerable quantities of animal organs and other natural organic materials. It is no coincidence that, at an early date, Danish industry entered that market and developed a series of valuable organotherapeutic preparations that still form a considerable part of the manufacturing and export programme of Danish companies. To that industrial output must be added a substantial production of penicillin and other antibiotics, vitamin preparations, and several synthetic compounds.

Over the past three years total Danish pharmaceutical production has been valued as follows:—1957: Kr 167 millions; 1958: Kr 178 millions; 1959: about Kr 195 millions. Denmark's export and import of medicine specified in the main groups is shown below:—

	Exports in million Kroner			Imports in million Kroner		
	1957	1958	1959	1957	1958	1959
Antibiotics (bulk and retail packings)	47·6	43·3	44·5	17·0	10·3	14·5
Insulin	22·8	22·7	25·0	—	—	—
Other organotherapeutic products	6·8	8·6	9·9	6·0	9·5	7·2
Serum, vaccines, etc. ..	0·5	0·6	0·7	4·3	2·0	1·9
Vitamins	12·1	13·7	19·3	15·2	16·0	23·0
Sulphonamides	15·6	17·6	17·0	2·9	2·8	3·5
Alkaloids, sterols, glycosides, etc.	0·3	0·4	0·2	4·5	5·7	4·9
Other pharmaceutical products	14·8	17·5	22·1	21·5	24·0	28·9
Total	120·5	124·4	138·7	71·4	70·3	83·9

Serums and vaccines are produced at two factories owned by the Danish State. The remainder of the industrial manufacture of pharmaceuticals is carried out by private enterprise. Insulin production is concentrated at three factories: Nordisk Insulinlaboratorium; NOVO Industri A/S; and Roskilde Medical Co. Two manufacturers—A/S Orthana and Frederiksberg Chemiske Fabriker, A/S—have specialised in manufacturing organotherapeutic preparations. Otherwise there is little by way of specialisation but, as other companies have developed, a certain natural division has taken place within the industry.

Most of the Danish companies have working agreements with companies in the United Kingdom and the United States for the interchange of information on research work. There are also agreements between them and their opposite numbers for the manufacture of certain products of each other.

Foreningen Af Danske Medicinfabrikker (MEFA for short), 3 Farimagsgade, Copenhagen, is the association that looks after the interests of pharmaceutical manufacturers in Denmark in the same way as the Association of British Pharmaceutical Industry in Britain. Like the A.B.P.I., MEFA is a member of P.I.A. (the Pharmaceutical Industries Association for the "Outer Seven" countries).

Visitors to the Congress who are interested in the manufacturing side of pharmacy may take the opportunity of calling on some of the manufacturers; it is understood that visits to some factories are being arranged.

A short description of the activities of several of the more important Danish pharmaceutical manufacturers is given on pp. 774–78.

AKTIESELSKABET ALFRED BENZON, Copenhagen

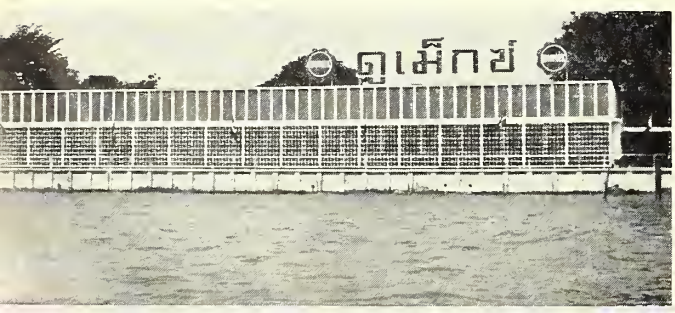
THE company was founded in 1849 by the then owner of the Swan Pharmacy, Copenhagen, Alfred Nicolai Benzon, who started a wholesale business in medicinal products. In 1863 Mr. Benzon established a chemical factory which still forms part of the group of factory buildings and warehouses on the present site of the company: 29 Halmtorvet, Copenhagen, V. Production in the early days was, of course, concentrated mainly on the chemicals, extracts, tinctures, ointments, etc., which pharmacists bought for repacking or compounding in their dispensaries. When the two sons Alfred and Otto Benzon took over the factory on their father's death in 1884, the manufacture of specialities began to be more intensively developed. During the 1890's the company began to co-operate with a number of leading Danish doctors, a form of co-operation that still exists. Many of the company's products over the years have owed their origin to the prescribing of those doctors, and it was to meet requests from two of them (Ludvig Nielsen and F. Vermehren) that Alfred Benzon prepared the first dry thyroid gland in Denmark. The company's products now include hormones, sulphonamides, ether, curare preparations, antihistaminics and tranquillisers.

DUMEX, A/S, Copenhagen, S.

DUMEX, A/S, 37 Prags Boulevard, Copenhagen, S, is a daughter company of the world-wide Danish East Asiatic Co. The parent company has been an established force in shipping, trading and chemical production for many years, with branches all over the world. Its first overseas activities date from 1946, when Dumex Private, Ltd., was established in Bombay. Rapid development followed in India and in the Far East. The first—and still the largest—overseas factory was built in Bombay, and subsequently factories were built in Karachi, Pakistan, Colombo, Ceylon, and in March this year in Bangkok, Siam. In addition to the areas mentioned the company is now well established in the Middle East, West and Central African countries, in Scandinavia, Finland and Western Germany. A majority interest in the Indian branch was sold in 1958 to Chas. Pfizer & Co., Inc., U.S.A. To cope with an ever-growing volume of business, and to meet the wishes of the newly independent countries of Asia and Africa to develop local industries, the company is setting up production facilities in many of the markets in which it operates, and new factories are being opened shortly in Kuala Lumpur, Malaya, and Saigon, Indo-China.

The main factory, central administration and research activities of the company remain, however, concentrated in Copenhagen. In 1958 a merger took place with one of Denmark's oldest established pharmaceutical companies, Medicinalco, A/S, as a result of which Dumex acquired further markets in Europe and South America. The merger has also permitted a considerable expansion of research activities. The research team of Medicinalco were responsible for the synthesis of tetraethylthiuram disulphide (Antabuse) and for its practical use in the treatment of alcoholics.

Benactyzine (marketed as Suavatil) was also a result of original work by their research team. The company produces a sizeable quantity of phenacetin. Dr. Jens Hald, of the company's biochemical laboratories, pointed out in 1951 (*Acta pharm. intern.* 1951, **11**, 27), the need for a control of the acet-4-chloranilide content of phenacetin. That toxic impurity was not easily identifiable by the various pharmacopœial tests then used. The latest pharmacopœias, including the B.P., 1958, have adopted a test suggested then by Dr. Hald. The combined company markets a wide and growing range of pharmaceutical specialities, including insulin and other hormones, antibiotics, tranquillisers, vitamin preparations, antituberculosis agents, drugs for tropical medicine and the Stucca brand plaster of Paris bandages. Dumex baby food, a specially formulated dried milk powder, is becoming a household word in many countries, and is the first product to be developed by the company's nutrition department. Dumex, A/S, at present employ approximately 450 people in Copenhagen alone, of whom thirty-five are pharmacists.



The recently opened factory of Dumex, A/S, at Bangkok, Siam, taken from across the Menam river.

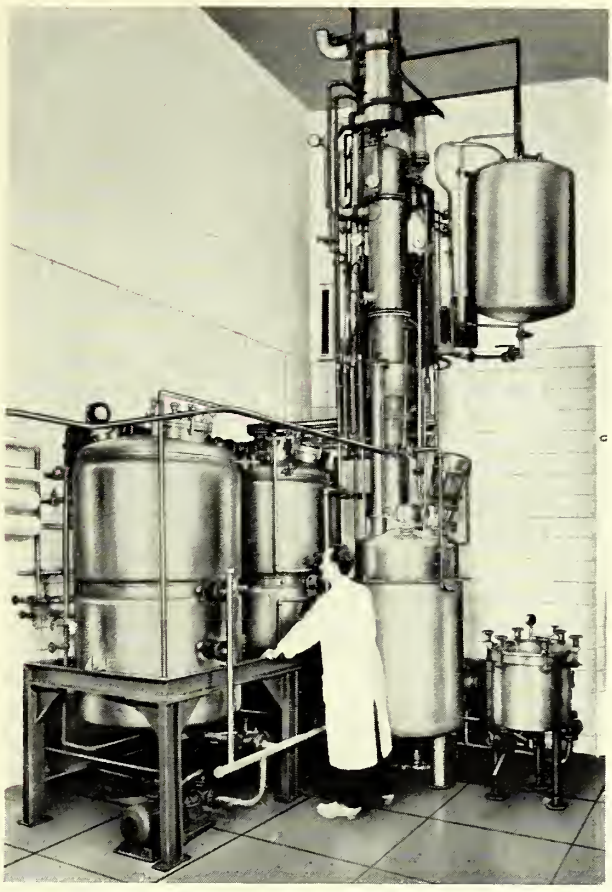
A/S FERROSAN, Copenhagen

THE manufacturing company A/S Ferrosan, Blegdamsvej 72, Copenhagen, Ö, was established on May 14, 1920. In its early years manufacture was limited to iron preparations, hence the name of the firm. The introduction of Idozan marked a new epoch in the iron therapy, for the basic principles of its manufacture were later listed in a number of pharmacopœias. Another speciality, the gold preparation Sanocrysin, created a stir when it was introduced in the 'twenties for the treatment of tuberculosis; subsequently it was found to be more useful for rheumatoid arthritis. The company claims to have been among the first in Europe to market an oral preparation (Exhepa), following the findings of Minot and Murphy on the effect of raw liver administered to patients with pernicious anæmia. Early in the company's development its research laboratories interested themselves in the manufacture of vitamin preparations. Between 1934 and 1936, before an international vitamin A unit was acknowledged, the company became one of the first manufacturers in the world to introduce a cod-liver oil biologically standardised to specifications worked out in its own laboratories. At the same time an intensive research was begun to find new sources for vitamin A and D. A factory was built in Norway to produce the two vitamins from halibut and whale liver, etc. A machine was invented for the manufacture of concentrated vitamins A and D preparations in the form of pills (Decamin), which, on the basis of licence, is now used in many other countries. Davitin, another vitamin-A speciality, is sold for mixing with cattle-feed cakes containing mineral substances. The company claims to be today the largest formulator of vitamin preparations in Northern Europe.

During the 1939-45 war and the years following it a number of new researches were taken up that eventually resulted in the discovery by AB Ferrosan of Malmo, Sweden (a sister company of equal size) of PAS, and the company was the first to introduce that compound into medicine. Departments or subsidiary companies have been established for the manufacture of herbicides, veterinary medicines, products for the feedstuff industry and finally medicated cosmetics.

Independent of other manufacturers the company produced sulphathiazole (Chemosept) in 1940. Today other sulphonamide-type drugs are made, an important example being the diuretic Salamid (4-amino-6-chlorobenzene-1, 3-disulphonamide). Among other products manufactured by the company are disinfectants (quaternary ammonium compounds), antihistamines, tranquillisers, antioxidants for the food industry, and herbicides. The number of people employed by the group is approximately 700. About 100 of those are engaged in research work at the Ferrosan laboratories.

The Ferrosan organisation has associated producing houses in Denmark and Sweden and branches in Norway and Finland. Ferrosan Export Corporation and Danochemo handle the company's exports. They have contacts throughout the world.



Plant for the manufacture of meprobamate at the factory of Aktieselskabet Gea.

AKTIESELSKABET GEA, Copenhagen

A/S GEA, Holger Danskesvej 89. Copenhagen. F, was founded in 1927 to manufacture medicinal specialities and diagnostic reagents. The company has subsequently specialised in the production of organotherapeutic products, whether in the form of simple dry gland or of isolated hormone. From the middle of the 1930's it took up the manufacture of synthetic medicinal specialities, and during the past ten years that production has been extensively developed. Production today includes analeptics, analgesics, antihistamines, central-nervous-system drugs, hypnotics, tranquillisers and organotherapeutic products. The research work of the company during the past years has been concentrated on ganglion-blocking agents and on problems in connection with vitamin B_{12} absorption. GEA specialities and drugs are exported through Gadex, Ltd., Copenhagen. A number of the company's preparations are manufactured under licence in several other countries.

FREDERIKSBERG CHEMICAL LABORATORIES, LTD., Kastrup, Copenhagen.

THE company was established about ten years ago and employs about 100 persons. It claims to be the first company in Scandinavia to manufacture ACTH preparations (Acton and Acton prolongatum).

LEO PHARMACEUTICAL PRODUCTS, Copenhagen

LEO Pharmaceutical Products, Ballerup Byvej 11, Ballerup, Copenhagen, was founded in 1908 by the owner (Mr. A. Kongsted), of one of the city's oldest pharmacies. The company began in a small way producing tablets for headaches, etc., but soon extended its scope to take in other items. As production increased costs fell, and when the 1914-18 war started the factory made Denmark self-supporting in a number of pharmaceuticals. Basic production of hormones was started in 1929, among those produced being gonadotrophic hormones, sex hormones and their derivatives. Subsequently various vitamins and other specialities were introduced. More and more scientists from Denmark and abroad became connected with the company and a number of new laboratory departments grew up. The start of the 1939-45 war, and the occupation of Denmark, put a stop to international research work. Nevertheless, though conditions were unsatisfactory, the company started research on the production of penicillin, and by 1942 the antibiotic was being produced in small quantities. The first patient was successfully treated with Leo penicillin in 1943. Today Leo Pharmaceutical Products make a range of various antibiotics, including penicillins, streptomycins and griseofulvin. Besides the antibiotics the company produces corticosteroids, non-mercurial diuretics and local analgesics, as well as large quantities of heparin by refining crude heparin received from the company's own factory in Argentina.

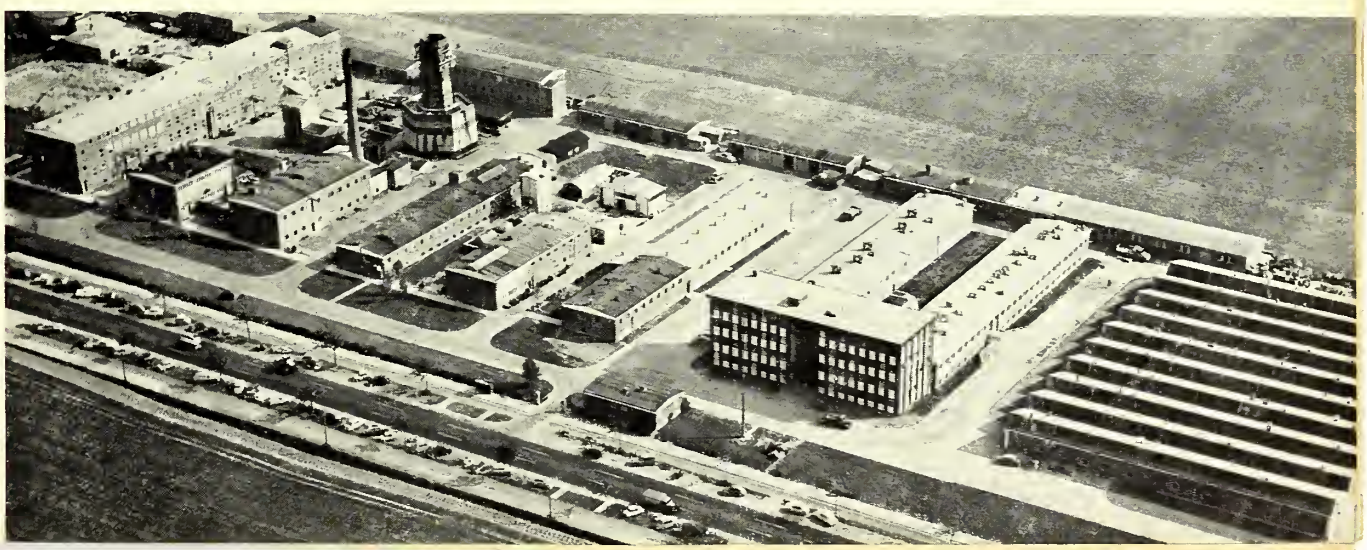
After the founder's death in 1942, the company was taken over by Mr. K. Abildgaard and under his leadership considerable expansion has taken place. New headquarters at Skovlunde, eight miles west of Copenhagen, with a floor area of over 240,000 sq. ft., was opened in 1958.

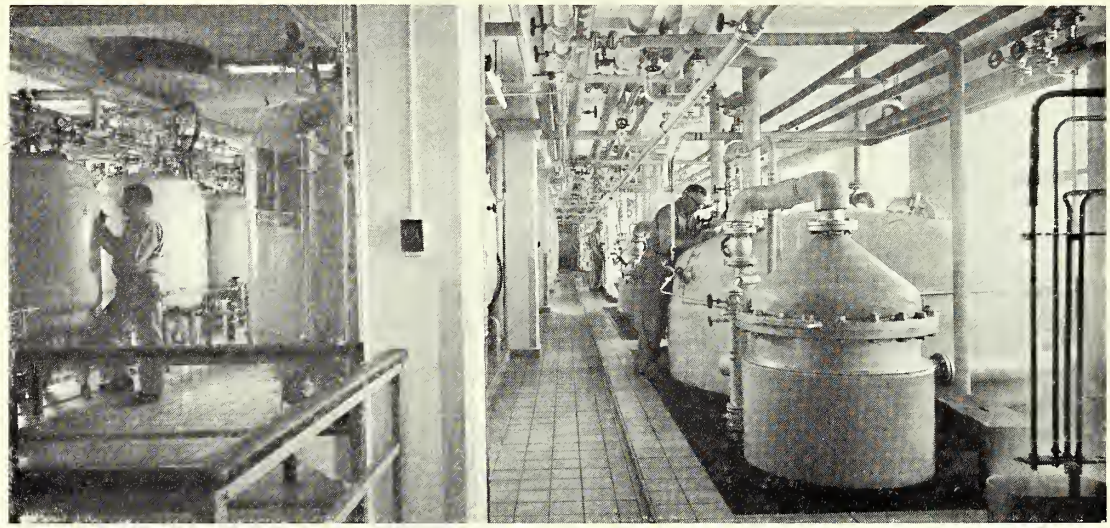
The company employs a large staff of scientists in its chemical and biochemical laboratories, analytical department; biological and pharmacological departments; bacteriological department; and pharmaceutical research laboratory.

Urokinase, which may have interesting possibilities in the treatment of coronary thrombosis, is currently under test. Two of the company's research workers (Niels Ole Kjeldgaard and Jorgen Ploug) described its isolation in 1957 (*Biochimica et Biophysica ACTA*). The material is being clinically tested in Denmark and the United States at the present time.

Before the 1939-45 war the company only exported to countries in Scandinavia, but today its products go to over

Aerial view of the factory of Leo Pharmaceutical Products at Ballerup on the outskirts of Copenhagen.





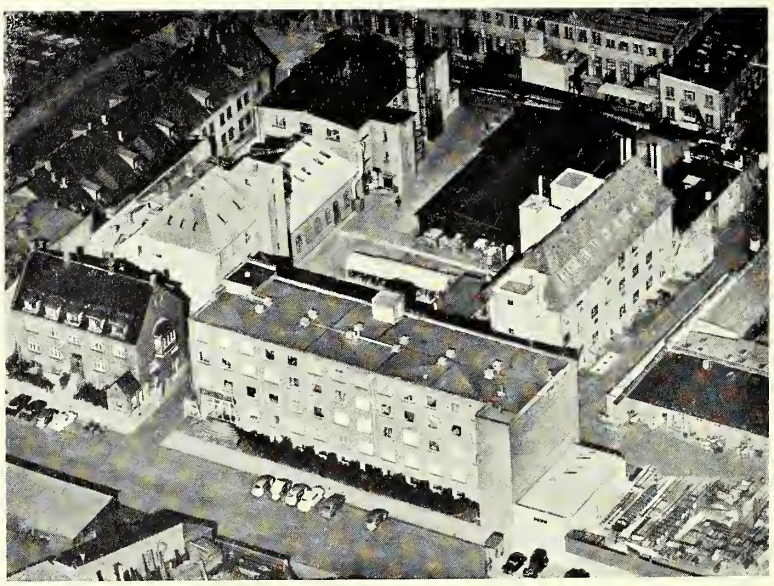
View of plant for the production of antibiotics and steroids at Leo Pharmaceutical Products.

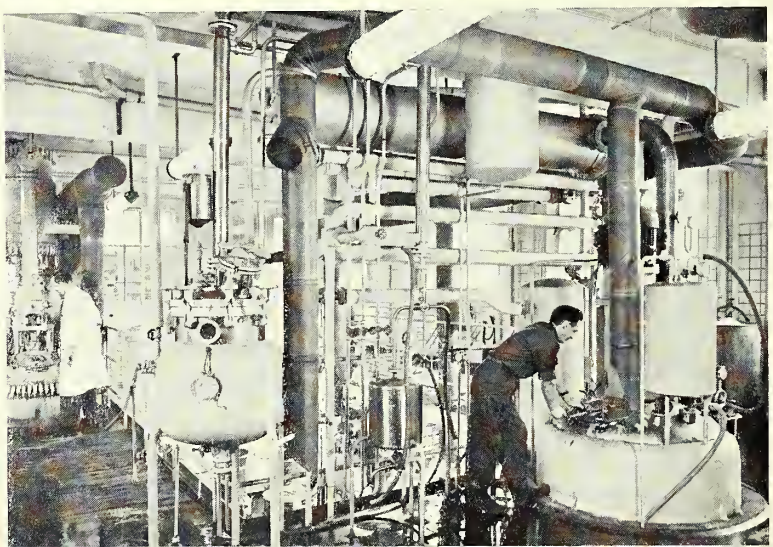
eighty countries. In almost all of them the goods are sold through local agents who are regularly visited by executives of the company's export department. The company has its own factories in Argentina, Brazil, Holland, France, Germany and Ireland. From the seventy people employed by the company in 1920 the number had increased to 200 by 1939 and stands today at about 1,000.

For the research work a lot of animals are required, and approximately 20,000 animals ranging from mice, rats, guinea pigs and monkeys (visitors please beware, they are not very friendly!), to cats. Most of the animals used are bred on the premises. Nearby is a dairy farm owned by the company.

H. LUNDBECK & CO., A/S, Copenhagen

FOUNDED in 1915, H. Lundbeck & Co., A/S, Valby, Copenhagen, began by representing various foreign pharmaceutical concerns from whom specialities were imported and sold on





Above: Department handling collection of urine from pregnant women for the production of chorionic gonadotrophin hormones.

At right: Headquarters of H. Lundbeck & Co. and (below) section of one of their pilot plants.

the Danish market. In 1932 they commenced local production of many of those preparations on a royalty basis. Five years later the company had started to make pharmaceutical specialities resulting from the research work undertaken in its own laboratories, and after, in 1945 the war having ended, the exportation of Lundbeck specialities was started. Today they are sold all over the world, partly through subsidiaries and partly through agents. Several of the company's specialities are manufactured by well-known pharmaceutical companies overseas under licence arrangements.

Branch factories are established in Norway and Sweden and there are agents in Holland, Belgium, Austria and Switzerland who undertake a certain amount of packaging.

Amongst the specialities developed by the company are Lucosil (sulphamethizole) and various preparations containing, as active ingredients, local antibiotics of Lundbeck manufacture. The antibiotics manufactured are those for local application. They include neomycin, bacitracin, tyrothricin, gramicidin and amphomycin. Products containing those antibiotics are sold under the trade marks Tyrosolvin, Tyrosolvetter, Nebacetin and Ecomytrin. Recent research work has been carried out by the company on central-nervous-system depressants and stimulants. Truxal, the first thiaxanthene derivative to be marketed, was launched in 1959 after comprehensive clinical trials had been carried out in several countries. Another important new product of the company is captodiamine (Covatin).

NORDISK INSULINLABORATORIUM, Gentofte

WHEN the late Professor Aug. Krogh visited the University of Toronto, Canada, in the autumn of 1922, it was arranged that he should initiate the manufacture of insulin in the Scandinavian countries. He did so by making an agreement with a pharmacist, Mr. A. Kongsted, founder and owner of the Lövens Kemiske Fabrik (Leo Chemical Works), the most important part of which was that the manufacture of insulin could be assigned to an independent institution. Professor Krogh also secured the assistance of H. C. Hagedorn, M.D., now chairman of the board of directors of the Nordisk Insulinlaboratorium, Ved Stadion 2, Gentofte, which became independent of the Leo Chemical Works in 1924. In the statutes of the new institution, which were confirmed by warrant from the King of Denmark on January 8, 1927, it was stipulated that any profit realized by the Nordisk Insulinlaboratorium should be handed over to a special committee (Nordisk Insulinfond), to be used for scientific research work only. In 1932 a research clinic, the Niels Steensens Hospital (the Steno Memorial Hospital) was opened for the study of metabolic diseases and a new institute for research was inaugurated in 1957.

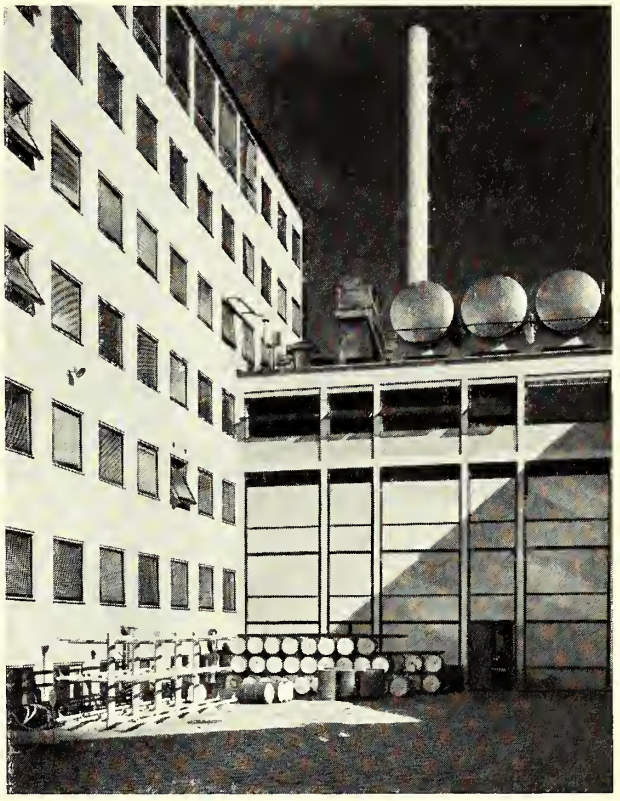
Towards the end of the 1930's Nordisk Insulinlaboratorium developed the slow-acting insulins by combining insulin with protamine, which proved to be a great step forward in insulin therapy.

During the 1939-45 war the company suffered heavily; one factory and much insulin and money were lost, but subsequently the company recovered. Besides the insulin preparations the company also produce Eldoncards for blood grouping (ABO and Rh_oD), for additional CDE-testing of D-negative donors, and for complete compatibility tests (papain test and indirect Coombs test).

NOVO INDUSTRI, A/S, Copenhagen

Novo Terapeutisk Laboratorium, A/S, Copenhagen, was in 1957 divided into two companies—Novo Terapeutisk Laboratorium, A/S, comprising basic manufacturing and research laboratories; and Novo Industri, A/S, which produces the finished specialities and handles the sales. Subsidiary companies have been established during recent years in Germany (Novo Industrie, G.m.b.H., Pharmaceutika, Mainz); in France (Novo Industrie Pharmaceutique, S.A.), and in South Africa (Novo Industries Pharmaceuticals (Pty.), Ltd., Johannesburg). In 1951 the executive management of Novo Terapeutisk Laboratorium, A/S, and its subsidiaries in Denmark and abroad was handed over by its founders, the brothers Harald and Thorvald Pedersen, to the board of directors of a newly established Novo Foundation. That Institution has a share in the companies' profits, and its funds are utilised partly for social welfare and for scientific projects.

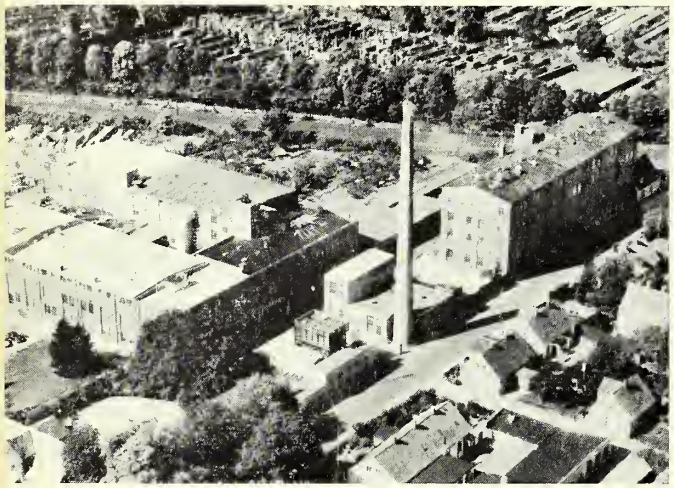
The headquarters of Novo Industri, A/S, at Copenhagen.



Courtyard at Fuglebakkevej, Copenhagen, present headquarters of Novo Industri, A/S.

The Hvidore hospital, near Copenhagen, was established by Novo in 1938 specially for diabetics. It has the dual object of creating facilities for clinical research into the problems of diabetes and of encouraging a closer relationship between laboratory and hospital.

Founded in 1925, Novo moved in 1931 to its present location: Fuglebakkevej 115, Copenhagen N. The production includes insulin, penicillin, streptomycin, enzymes, heparin and catgut. The company is one of the world's largest insulin manufacturers, and the new lente insulins (zinc



The Roskilde Medical Co.'s plant at Roskilde, about eighteen miles from Copenhagen.

insulin suspensions) are an original development by Novo and are manufactured on a licence basis in England and the United States.

The concomitant utilisation of pancreas glands for the production of insulin and proteolytic enzymes is likewise a world-wide patented method from Novo. Trypure Novo, a purified, crystalline trypsin made from pancreas glands is widely used in the treatment of wounds, burns, etc. The company is a large producer of enzymes, and the industries using them are numerous. Production of penicillin was taken up in 1947 followed in 1954 by streptomycin and in 1955 by herapin.

Novo Industri claims to have been the first company to produce aluminium caps with rubber insets for closing injection vials. The limited size of the Danish market made it imperative to look for export opportunities. That side of the business was gradually extended as new products were added, and today it is world-wide, taking in about fifty countries. About 90 per cent. of the company's total production is exported despite high tariff rates imposed by some countries.

Operations are now being extended at Gladsaxe, about six miles north-west of the present plant. The new plant is to consist of standardised one-story buildings of a flexible type permitting adaptation to changing demands due to rapid developments within the pharmaceutical industry. It has been designed by the world-famous architect Professor Arne Jacobsen, whose plans for a new Oxford recently caused such a stir in the British Press.

An important item included in the expansion programme at Gladsaxe is the large number of laboratory buildings for scientific research.

The company employs about 900 persons and, recognising that research is the "lifeblood" of the pharmaceutical industry — it has put to work about 25 per cent. in the laboratories. Each branch of production in the concern has its research and control laboratories, and a number of special laboratories are engaged on subjects such as radioactive isotopes, pharmacology, bacteriology, physiology and electrophoresis.

AKTIESELSKABET PHARMACIA, Copenhagen

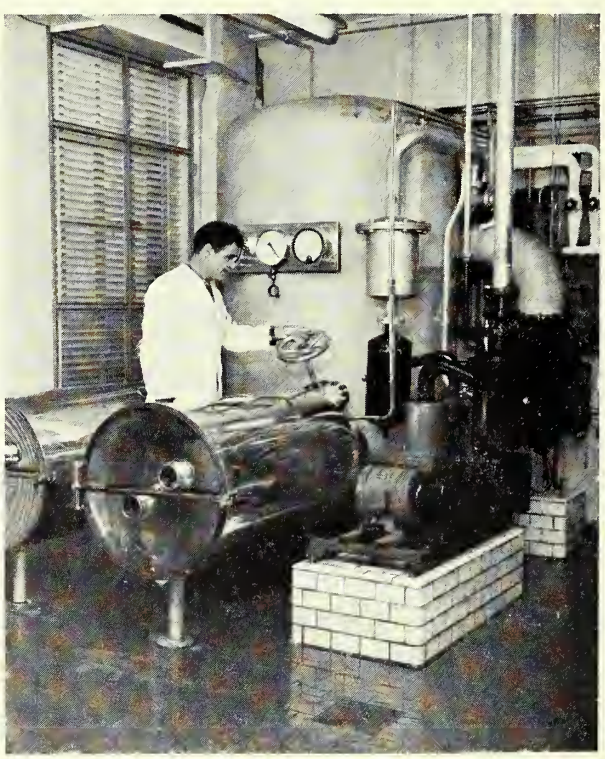
A/S PHARMACIA, 48 Lindealle, Copenhagen-Vanlose, was founded in 1922 and for twenty years was situated close to a large shipyard and machine construction works. During an air-raid attack in 1944 against the neighbour's works the company's factory was so damaged that the whole company had to be moved, and from 1944 to 1957 the company was situated at Sankt Knuds Vej 16, Frederiksberg. In 1957 the production and research departments were transferred to a new factory at Linde Alle 48, Copenhagen-Vanlose, to which also the administration department has now been almost completely transferred.

The company is mainly occupied with development and production of pharmaceutical specialities, pharmaceutical chemicals in bulk, and a number of medicinal cosmetic preparations. The research department includes pharmaceutical, pharmacological and biological laboratories. A/S Pharmacia works closely with AB Pharmacia, Uppsala, Sweden, and with several American and European pharmaceutical manufacturers. Preparations specially developed by the group are Macrodex and other dextran products, Nevental (allyl-neopentyl barbituric acid), and Oxaditon (a ganglion-blocking agent).

ROSKILDE MEDICAL CO., Roskilde

ROSKILDE Medical Co. was founded in 1940 as a research plant associated with the Danske Andelsslagteriers Konservesfabrik, the object being to produce medicinal preparations from glands and stomach mucosa supplied by the local slaughterhouses. The first two preparations the company put on the market were pepsin and insulin, extracted from the gastric mucosa and pancreas respectively of pigs. In 1950 production was expanded to include penicillin; subsequently the production was extended to include penicillin V. The experience gained from the penicillin fermentation process made it natural to turn to the production of dextran, ordinary sugar being converted by bacterial action in the fermentation tanks. Production of hormones was begun at an early stage in the company's activities. A large number of Denmark's bacon factories supply the pituitary glands from which ACTH is produced. Other products of the company include Hepapyl (a product for pernicious anæmia), oxytocin and pituitrin.

For many years R.M.C. has been co-operating with the State Serum Institute, the result being the manufacture of a series of tablets for diagnostic work. Several of the companys' own production methods are patented, some being used abroad.



Freeze-drying and fermentation equipment at the works of Roskilde Medical Co.

The issue recently by the Rumanian Government of a set of ten postage stamps depicting medicinal plants that grow within that country's borders is a reminder that materia medica stamps are in many other countries' ranges. As our contributor points out, they would yield enough material for a book.

POSTAGE STAMP PHARMACOGNOSY

ALFRED H. HAYNES

A NEW set of ten postage stamps issued by Rumania exquisitely depicts in natural colours various medicinal plants indigenous to that country. The flowers depicted range from foxgloves and red poppies to chamomiles and wild roses. In placing on sale stamps bearing designs of medicinal plants, Rumania is following a precedent established by Bulgaria in 1953, when a similar set of fourteen stamps was issued. Another country that has extensively featured materia medica on its postage stamps is Jugo-Slavia which has issued since 1955 three different sets at two-yearly intervals.

Check lists

Though it would be foolish to say that all the flowers, fruits, herbs, etc., mentioned in books of materia medica have been included in the designs of postage stamps, a philatelic collection, widely illustrative of pharmacognosy, can now be compiled. For the most part sets and single specimens of the stamps can be purchased quite cheaply; if stamp dealers are unable to identify particular flowers, plants, etc., then one of the check lists issued by the American Topical Association will enable the purchaser to identify readily and clearly floral, etc., stamps.

As pharmacists are well aware, the science of pharmacognosy considers, as a subdivision, the vegetable sources from which crude drugs are extracted. Altogether there are some twenty groups, the first and second being leaves and flowers. In the first group are, amongst many others, the leaves obtained from belladonna, thornapple, purple foxgloves and tea shrubs. All have, at some time or another, been depicted on postage stamps. Nearly every country in the world, Great Britain being the main exception, has taken advantage of the propaganda value of postage stamps to feature and advertise national products. For that reason one has only to think in terms of geographical locations to bring to mind particular plants or products. For instance, the economic importance to the self-governing dominion of Ceylon of its tea plantations was evidenced both in 1935 and 1951 when stamps, each showing a native girl busily engaged in plucking the leaves, were issued. A more recent stamp of similar basic design was issued in August 1959 by Rhodesia and Nyasaland. For a European example, one might quote Jugo-Slavia, which annually produces and exports many hundreds of thousands of kilos of drugs obtained from its natural flora: Belladonna, thornapple and woolly foxgloves are but three of the medicinal plants for which Jugo-Slavia is famous and they, together with many others, have been beautifully reproduced to form the colourful designs of that country's stamps.

Medicinal flowers are represented in stamps by the red or field poppy, which appears in the designs of many countries. As a philatelic work of art, probably no other stamp so vividly brings the poppy's wild beauty to life as the 10 lire value of the 1957 San Marino set. The scarlet of the poppy brings to mind the European red rose, a flower which many countries, including Bulgaria, Czechoslovakia and Switzerland have featured on their stamps. The most exquisite and perfectly detailed rose-flower stamp is, however, that issued in 1956 by the Grand Duchy of Luxemburg. Naturally enough Bulgaria has drawn attention to its attar industry by featuring roses in stamp-designs; since 1938, no less than six separate issues have been printed. The common or Roman chamomile, which as already stated, appears on one of the recently issued Rumanian stamps, also appears on the 25d. value of the 1955 Jugo-Slavian set. Cloves being one of the main exports of Zanzibar, it is not surprising to find a blossom from a clove tree appearing on one of that country's 1957 stamps. Other medicinal flowers that appear on postage stamps include pyrethrum (Jugo-Slavia, 1957); lavender (Monaco, 1959); saffron (Rumania, 1959); lily of the valley (Japan, 1947) and coltsfoot (Rumania, 1953).

Stamps identified with extraction

Many stamps identify themselves with the extraction of crude drugs. Subjects that may be cited included a lime plantation (Dominica, 1951), a citrus grove (Jamaica, 1938), oranges (Iraq, 1959 and Dominica, 1951), lemons (Guinea, 1959) and grapefruit (Guinea, 1959). In Britain hops are associated particularly with Kent but, as may be seen from the low-valued Jugo-Slavian green and brown stamp of 1955, they are also indigenous to that country. One of the by-products of philatelic enthusiasm is the increased knowledge one acquires by merely studying pictorial designs. What method is used to cultivate pepper vines, for instance? The answer is readily found by studying a stamp issued in 1950 by Sarawak. From a Peruvian stamp of 1936, can be discerned the appearance of a South American fig tree; the

FOXGLOVE

PEPPERMINT

CHAMOMILE

COLCHICUM

ACONITE

RED POPPY

COLCHICUM

BELLADONNA

VALERIAN

FOXGLOVE

LAVENDER

STRAMONIUM

VANILLA

COTTON

ALOES

stamp might well be placed beside an Israel "figs" stamp issued in 1952 to commemorate the Jewish New Year. To illustrate the hips of the wild rose, many stamps are available. The delicate tracery of the overhanging wild rose spray pictured on the 1957 Liechtenstein stamp results in a design which is exceedingly attractive. A Madagascar stamp of 1956 gives a clear picture of a vanilla plant.

From fruits to seeds is but a short step and, here again, is a group which can be well illustrated by the selective use of appropriate stamps. The small island of St. Helena has provided a number of stamps to demonstrate the importance of its flax-growing industry, a source of linseed. From its 1953 issue (still current) may be gleaned much information as to the appearance of a plantation, how flax is dried, how it is reaped and the manner in which donkeys are pressed into service to transport the harvested flax from the plantations. Equally educative are the stamps issued by Ghana and other tropical countries on the theme of cocoa farming. Quinces, the seeds of which were once used extensively as a demulcent, are featured on ten stamps of Lebanon placed on sale in 1956. On a 1937 Sierra Leone stamp may be seen the tree from which cola seeds are obtained.

From all over the world

From what has been said, it will be seen that materia medica stamps come from all over the world. The purpose of this article is not, however, to catalogue the many scores of stamps available on the theme, but simply to indicate briefly the fascinating possibilities of using the diverse pictorial material philately provides as a means of illustrating pharmacognosy. To the few stamps that have been mentioned may be added dozens of others, equally colourful and equally informative. Examples of medicinal herbs pictured on stamps are aconite (Jugo-Slavia, 1959), coltsfoot (Bulgaria, 1953), euphorbia (Belgian Congo, 1953), bladderwrack (Channel Islands, 1948), and centaury (Jugo-Slavia, 1957). In the group relating to crude drugs obtainable from barks are cotton-root (Pakistan, 1954), alder (Jugo-Slavia, 1959), pomegranate (Jugo-Slavia, 1959) and willow (Iceland, 1958). A philatelic investigation into subterranean organs reveals many illustrative stamps, of which the following are but a few:—Valerian rhizome (Jugo-Slavia, 1957), dandelion root (Bulgaria, 1953), arnica rhizome (Belgium, 1949), gentian root (Austria 1948) and orris root (San Marino, 1953). One might go on with starches, dried latex, dried juices, fixed oils and all the other groups. One thing in common between the nations seems to be their affection for the things that nature distributes, hence the abundance of beautifully designed floral, etc., stamps now current and to which more are being added almost every week.

Related Subjects

An illustrative collection based on the theme of materia medica does not, however, end with stamps bearing representations in pictorial form of flowers, herbs and trees. If nature provided, it was man who probed into and investigated the medicinal properties of her gifts and on stamps are to be found the portraits of many who have contributed to the development of scientific and applied pharmacognosy. Such stamps as those portraying the Egyptian Imhotep (Egypt, 1927), Aesculapius (Spain, 1948), the goddess Hygeia (New Zealand, 1932), Hippocrates (Greece, 1947) and Li-Shechen (China, 1955), are deserving of mention. They pave the way to a stamp issued by Afghanistan in 1951 showing Avicenna, and to issues by other countries bearing portraits of the great pharmacists, physicists and botanists of the sixteenth to the nineteenth centuries. If, unsatisfied with all this additional illustrative material is required, then there remains the further thematic field of druggists' tools and appliances.

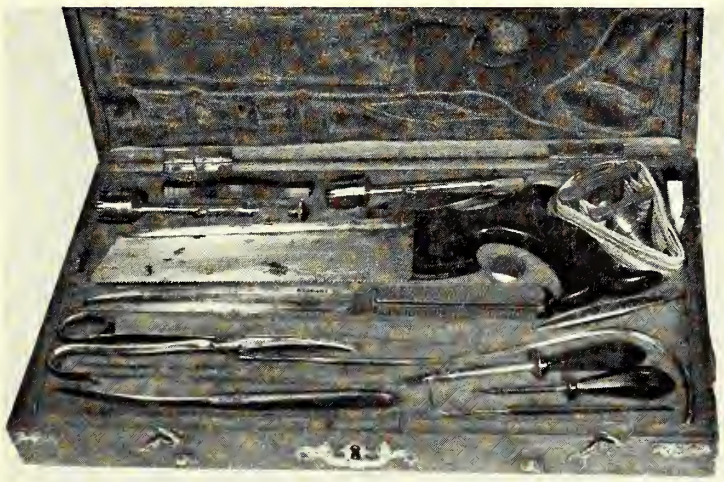
In fine, there is an ever-widening opportunity to compile a completely new volume of materia medica—not written in words but in the interpretive language of foreign stamps.

MUSEUM PIECES

ITEMS FROM THE TICKENHILL BYGONE COLLECTION, BEWDLEY, WORCESTERSHIRE

1

2



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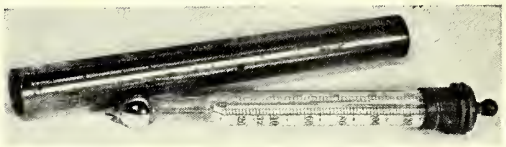


5

6

1. *Medicine spoon made of Britannia metal, and stamped "warranted." (see C. & D., Annual Special Issue, September 9, 1959).*
2. *Two old hearing aids: a brass ear trumpet with decorative openwork; aid with ebony ear attachment and silver speaking cup. Made by Hawksley, 157 Oxford Street, London.*
3. *Case of surgeons' instruments.*
4. *Measuring jug made of horn, and two porcelain medicine spoons with feet to keep them from spilling contents.*
5. *From a nineteenth-century doctor's case: a thermometer in brass case, showing Reaumur and Fahrenheit scales.*
6. *Doctor's portable dispensing case, containing the dose spoons of illustration 4. Two silver-topped bottles in drawer. The pills were sold by Corbyn & Co., London.*
7. *Glass-ended pestle, and glass pestle and mortar.*

7

All is not blatant that advertises

Among eighteenth-century trade cards, which usually carried elegant engravings of copperplate titles, the example here reproduced must stand as an early example of restraint, both in presentation and in claim. "Faithfully prepared" seems hardly to carry the implication that the articles and medicines might be less well prepared elsewhere. "Carefully dispensed" is almost equally unexceptionable, and certainly in advance of its period.

JONES,

(No. 24)

Great Ruſſel-Street, Oppoſite *Brydges-Street*, *Covent-Garden*;

Sells the following ARTICLES and MEDICINES faithfully prepared:

FINE
Lavender
Hungary
Orange Flower
Elder Flower
Roſe
Spearmint } Waters
Peppermint
Hyſteric
Treacle
Cinnamon
Arquebuſade
Powder of Salop
——— Jalap
——— Turkey Rhubarb
——— Fine Bark
——— Red Bark
——— Ipecacuanha
——— Compound Contrayerva
Contrayerva Balls
Gaſcoign's Balls
Prepared Hartſhorn
———Chalk
———Antimony
———Steel
———Tutty
———Calaminaris
Turkey Rhubarb
Hiera Picra
Sago
Pearl Barley
Hartſhorn Shavings
Iſinglaſs
Venice Treacle
Mithridate
Lenitive Electuary
Cream of Tartar

Milk of Sulphur
Flour of Sulphur
Spirits of Hartſhorn
———Lavender
———Sal Volatile
Oil of Almonds
Spermaceti
White Wax
Tinctures } of all Kinds
Syrups
Gums
Ointments
Plaiſters
Oil of Caſtor
Balſam of Tolu
——— Peru
——— Gilead
——— Capaiva
Fryar's Balſam
Opodeldoc
Alkanet Root
Roſe Pink
Logwood
Linſeed Oil
Salt of Nitre
———Prunella
———Wormwood
———Tartar
———Steel
Camphor
Eſſence of Ambergreaſe
——— Lemon
——— Bergamot
——— Lavender
Eau de Luce
Smelling Salts
Poignant Smelling Bottles
Rochelle Salts

Glauber's Salts
Fine Flake Manna
Fine Grain Manna
Pill Cochiæ
— Ruffus
— Storax
— Gum
Magneſia
———Calcined
Huxham's Tinct. of Bark
Cordial Tincture of Rhubarb
Elixir of Vitriol
—— Paregoric
—— Proprietatis
Daffy's Elixir
Laudanum
Conſerve of Hips
——— Roſes
Red Roſe Leaves
Gentian Root
Snake Root
Orange Peel
Chamomile Flowers
Juniper Berries
Coriander Seeds
Aniſeeds
Cardamum Seeds
Saffron
Cochineal
Saſſafras
China Root
Guaiacum
Red Saunders
Yellow Saunders
Sarſaparilla Root
Court Sticking Plaiſter
Pontefract Cakes

Spaniſh Juice
Tamarinds
Honey
Fine Tooth Powder
Caſtile Soap
Goulard's Extract
Æthiop's Mineral
Calomel prepared
Emetic Tartar
Bole Armoniac
Senæ
Valerian
Double Aquafortis
Spirits of Salts
Oil of Vitriol
Æther
Hoffman's Anodyne
Green Copperas
White Copperas
Blue Vitriol
All Kinds of Horſe Medicines

ALSO

Dr James's Powders
Dr. James's Analeptic Pills
Dr. Anderſon's Scots Pills
Dr. Hooper's Pills
Dr. Plummer's Pills
Dr. Bateman's Drops
Dr. Godfrey's Cordial
Eſſence of Peppermint
Steers's Opodeldoc
Turlington's Balſam
Britiſh Oil
Iſſue Plaiſters, &c.

N. B. Phyſicians' Preſcriptions carefully diſpenſed.

GENUINE TINCTURE of PERUVIAN BARK; made to contain all the Virtues of that celebrated Drug in the ſtrongeſt poſſible Degree.

A History of the British Pharmaceutical Conference

1. The First Ten Years

E. H. SHIELDS

THE original suggestion for an annual conference of pharmacists, to be held in the provinces, came from Mr. G. F. Schacht, Clifton, Bristol. The first meeting was convened by a notice in the *Pharmaceutical Journal,* August 1863. The conveners, fifty leading pharmaceutists of the day, were anxious to disclaim any antagonism to the Pharmaceutical Society, and their names were, indeed, a sufficient guarantee that such a motive was not in their minds. The conference was to be regarded as a perfectly safe and economical experiment, with no costly outlay, no salaries, no publications department. By linking up with the meeting of the British Association in the first instance, it would be possible to obtain return rail tickets at single fare to Newcastle-on-Tyne, the venue for the Association's meeting that year, and to avoid any possibility of disappointment if the "experiment" failed. The approach could not have been more cautious.

As a result, about twenty-five pharmacists met at Baker's Hotel, Newcastle, on the morning of September 2, 1863, the last day of the British Association meeting. Mr. H. Deane, Clapham, was voted to the chair, and Mr. H. B. Brady, Newcastle, took notes of the proceedings. The chairman introduced the subject in a general way, commending the idea of a regular, *provincial* Conference as tending to encourage that love of truth, order and precision which would drive out the inferior, the adulterated and the spurious. The greatest difficulty, he pointed out, was ignorance, a culpable and unworthy ignorance which they must individually and collectively endeavour to dispel.

Carried Unanimously

The initial resolution was proposed by Professor Bentley and seconded by Dr. Attfield: "That it is desirable that an Association be formed, to be called the British Pharmaceutical Conference, for the purpose of holding in the provinces an annual meeting of those engaged in pharmacy." After a brief discussion, which served to emphasise the broad and liberal basis of the Conference and its complete independence, the resolution was carried unanimously. The draft constitution and rules were submitted by Mr. Brady and approved with only slight amendment, and the British Pharmaceutical Conference was in being. Mr. H. Deane, F.L.S., was elected president for the year, and he was to be supported by a goodly array of colleagues, including four vice-presidents, a treasurer, two general secretaries, a local secretary, and a committee of nine members. No one left that small room without a real job of work to do.

At an evening meeting on the same day papers were read by Mr. B. S. Proctor on "Weights and Measures" and by Mr. R. Reynolds on some glaring adulterations in quinine, tartaric acid, powdered opium, and gold chloride for use in photography. Mr. Proctor thought that the decimal system was better than the existing want of system but, for commercial purposes, 8 and 12 had advantages over 10 as a basic figure. The meeting was followed by a supper at which, after the loyal toasts, the memory of Jacob Bell was honoured in solemn silence. One feels that he would have approved of all those happenings. They had been simple, unpretentious but significant.

The following year the Conference met at Bath, September 14–19, and the attendance was described as "by no means bad." Mr. Deane's presidential address was devoted to a critical examination of the first British Pharmacopœia and a plea for care in dispensing. Both subjects were topical. The Pharmaceutical Society had gone to considerable trouble in its contribution to the preliminary work for the new B.P., and Jacob Bell, with characteristic energy and determination, had made several journeys to Edinburgh and Dublin in the effort to produce a book satisfactory to all concerned. Even so, the volume left much to be desired, and it was to be hoped, said Mr. Deane, that Conference members would endeavour to suggest improvements for the next edition. A sad case of accidental poisoning through an alleged mistake in dispensing gave point to the second part of the address and also to the discussion that followed. A small committee, appointed on the spot, soon produced a series of useful recommendations on shop arrangement, dispensing, and the sale of poisons, and on the final day detailed "Suggestions concerning Accidental Poisoning" were approved. Prompt action was obviously necessary; during the previous two years many cases of accidental poisoning had been reported in the trade Press, and it was only too easy for the committee to base its findings and deductions on actual facts.

In other sessions Mr. Proctor developed his ideas on weights and measures, Mr. Daniel Hanbury described one of his fascinating holidays abroad, and Mr. F. B. Benger

dealt with some applications of that interesting novelty, glycerin. There were twenty-eight papers in all, and the executive committee had good reason for satisfaction with the results of that first year's work and the nucleus of 150 members. Mr. H. Deane was again elected president, and the new executive included Mr. J. C. Brough, the first Editor of THE CHEMIST AND DRUGGIST. At the concluding dinner Mr. Brough acknowledged the toast of the trade Press.

Twice the Membership in Two Years

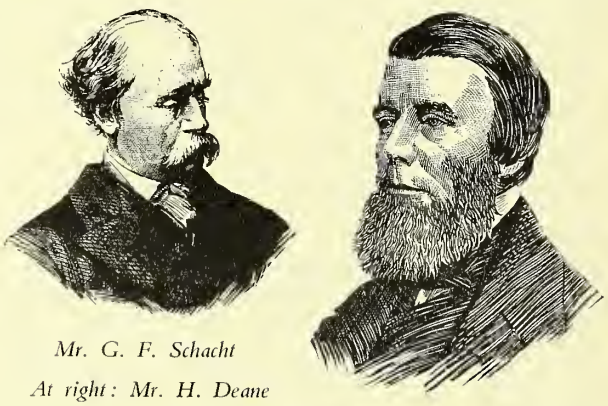
By the time of the next Conference at Birmingham in September 1865 the membership had more than doubled, and the gathering was again under the wing of the British Association. Mr. Deane was still concerned with the first B.P. and the dangers of accidental poisoning. It was not to be expected that an amalgamation and concentration of three sets of formulas, issued by three distinct medical bodies, could be presented to the profession and the public without a certain amount of virtuous indignation from those affected by the change. The criticisms were being noted, and the work of revision was already in hand by a knowledgeable committee. Poisoning could be either accidental or malicious, and there had recently been a particularly horrible example of the latter: corrosive sublimate had been substituted for the normal content of a proprietary powder for infants. Mr. Deane himself had been called in as an expert witness by virtue of his twenty-three years' experience of "microscopic science." The seller and manufacturers were exonerated, but the case served to remind chemists everywhere of the risks and responsibilities of their daily work. "Poisoning and the Means of Prevention" had been investigated by an Edinburgh pharmaceutical committee, whose report and recommendations the trade generally was urged to consider so as to reduce the risk to the minimum.

Mr. Deane was also concerned for the social status of pharmaceutists. They had work to do which was second to none. "Some of the greatest and most honoured men in Europe had been chemists, keeping open shop for the sale of their commodities and the dispensing of medicines." But unhealthy and questionable competition such as that which led to the sale of tincture of rhubarb, laudanum or friar's balsam at 2d. or 3d. an ounce was not the way to good social standing. "If the whole were profit it would not be more than enough." Still more reprehensible was the widespread practice of substitution. The pharmacists of Edinburgh were again commended for their efforts to establish a uniform system of pricing.

One of the most interesting of the twenty-eight papers from members was by Barnard Proctor on "Emulsions." He made some of his most telling points with the simplest apparatus—small vials and varying amounts of oil and water. Oil-in-water emulsions he described as positive, water-in-oil as negative. "Here was an ample field for both inductive and deductive work in which I had hoped to establish a few interesting principles, and by the application of these principles to lay down a few general rules of practical utility to the pharmaceutist." On the evening of Friday, September 8, there was a conversazione, with short talks on scientific subjects, interspersed with tuneful items from Mr. Alfred Bird and his son on a six-octave set of musical glasses. Local manufacturers vied with each other in a display of their products, Mr. Thomas Barclay acting as guide.

When the Conference met at Nottingham in 1866 Professor Bentley was in the chair, and his opening address was, not unnaturally, a plea for a wider recognition of the importance of botany. At that time "about 400 species of plants, some parts of which, or their products and secretions," were used in medicine, and it was urgently necessary that pharmaceutists should be on their guard against substitution and adulteration. Only recently, within his own observation, double feverfew flowers had been substituted for chamomile, and saffron stamens admixed with the officinal style and stigmas. None but a botanist could have detected and traced such nefarious activities. The arguments were marshalled in massive array and we may almost hear the beloved botanical terms and Natural Orders coming down the years.

The whole of the second day was given to a lecture by Joseph Ince on "Pharmaceutical Ethics" and subsequent discussion. Mr. Ince began with Aristotle, but soon came to grips with the ethics of the shop, declaring point blank that "pharmacy is a trade." "The pharmaceutist is a tradesman—he buys his stock to sell again." There were, however, many circumstances and influences at work, from which the trade acquired a professional character. In no case should any trade casuistry induce him to lower the standard of excellence of his stock. If he adopted that rule consistently the adoption of low and ruinous prices would never appeal to him. "Having determined to



Mr. G. F. Schacht

At right: Mr. H. Deane

be master of his own business he will be content to abide by his own regulations and not, on the one hand, place himself at the mercy of the competitor who trims his sail to every wind that blows or, on the other, to the caprice of the customer who, not always truthfully, asserts that he has obtained articles of a definite commercial value at a starvation price." A further fundamental rule of the well-regulated establishment is to supply in every case the identical thing desired. "To do otherwise seems to me not to warrant so fine a phrase as a trade error but a pure shop mistake. . . . Confidence begets trade, and trade puts money in the till." Like another author whom he praised, Joseph Ince could steer most successfully "between the Scylla of the high and dry and the Charybdis of the goody-good." He quoted what he called a difficult proposition from Parrish's "Practical Pharmacy": "During business hours all hands must be on their feet."

The second section was on "Social Ethics"—the behaviour of the pharmaceutist to those in the same line of business as himself. It gave some interesting sidelights on the pharmacy of the day: the practical objections to the adoption of a general tariff; the difficulty of dealing with certain foolish formulas which from time to time found their way to distressed dispensers. "The original may be found in antique English works or in that disgrace to modern pharmacy, the Paris Codex of 1837." When such prescriptions come along what is the duty of the pharmaceutist? "I say he has no duty. He must manage as best he may, between his customer and himself." Happy Joseph Ince.

Apprenticeship Problems

Apprentices should be taken seriously and Ince deplored the increasing habit of large establishments of refusing to have them. The result of that policy was to drive the young men to smaller, less educative shops where the premium and cheap labour were the main considerations. He con-

fessed that he himself had entered the trade at the age of twenty-one after a liberal education, and for some time he had hated the life he was then compelled to lead. How he came, thanks to Horace, eventually to love it must be one of the classical romances of pharmacy.

Further sections covered medical and personal ethics, the ethics of public life and of trade expansion. The discussion which followed ranged far and wide . . . over early closing, the undesirability of special arrangements between doctors and pharmacists for dispensing, the educational value of bottle dusting, a universal tariff, rewards of pharmaceutical proprietorship—Mr. Deane said that half the chemists of the country did not return more than £200 a year by the legitimate exercise of their business. The outcome was a resolution "That this meeting considers that the practice of pharmacy requires to be limited to fully qualified persons and that it is necessary, in order to achieve this result, that an appropriate examination should be enforced by legislative authority."

Professor Bentley

Professor Attfield

Mr. J. C. Brough contributed a paper "On the proposed introduction of two systems of chemical notation in the Pharmacopœia." At that time chemical notation was in a state of flux. It was generally agreed that the system used in B.P., 1864, was out of date, but there was no agreement as to the correct alternative. In such circumstances the Medical Council, by a majority vote of eleven to eight, decided that two systems should be employed. Mr. Brough argued that they represented two phases of chemical science, between which there was almost as great a difference as between the Ptolemaic and the Copernican systems of astronomy. The B.P. was an essentially practical work, and the proposed double formulæ would be an embarrassment rather than a help, reflecting a transitional state that could not endure for long. If symbolic formulas were needed at all they should be those already adopted by leading modern chemists. In the event the compilers followed their majority but Time, that hidden root of change, has amply justified Mr. Brough.

Membership of the Conference when it met in Dundee in 1867, with Professor Bentley again in the chair, had grown to 478. Bentley extended the previous year's discourse in order to do justice to the study of botany as an ideal aid to mental training and a perfect means of relaxation from the cares of business.

A Question of Principle

About three years previously Mr. Kerr, Dundee, had been in trouble with the excise authorities over the sale of quinine wine without a so-called "sweets licence." After some correspondence the matter was resolved by the payment of 22s. a year but a question of principle seemed to be involved and Mr. Kerr wished it to be made clear. In the discussion some curious decisions by the Board of Inland Revenue were disclosed and a small committee, including Professor Bentley, Mr. Kerr, Mr. Brough and three other members, was set up to examine and report the following day. The report was ready by 10.30 a.m., and after discussion the Council of the Pharmaceutical Society was requested to use its best efforts to induce the Board of Inland Revenue to take steps to "reduce all legislative enactments bearing upon the subject to the simplest possible code and to adopt any other measures calculated to place the relations of the excise towards pharmacy in a clearer light." Optimism must have been in the air. The Conference was much concerned with adulteration and substitution, and there were useful papers on white precipitate, jalap and opium preparations, and the notoriously fallacious "mag. cit." In lighter mood the Conference made history with its excursion to Craighall, the original of Tully Veolan of *Waverley*. The party filled a large omnibus, inside and out, and four wagonettes. "Science, literature and refinement marked every step of the way" according to the *Dundee Advertiser*. Even a heavy shower failed to damp the spirits; it resulted in a lovely rainbow, "a thing of beauty which these studious men watched with childlike pleasure till it vanished away like a dream." Even plant lovers, however, do not always agree and one specimen raised an argument. Was it St. John's Wort? Aaron's Rod? Ragwort? Professor Bentley settled the question. It was *Solidago virga-aurea*. Mr. H. Deane, F.L.S., discovered an old friend in *Blechnum boreale* and the party, one by one, congratulated him "in language which seemed to indicate that he had found a dear old friend of their own." At the final session on September 16 Daniel Hanbury, F.R.S., F.L.S., was elected president for the ensuing year and the significant name of Michael Carteighe was included in the executive committee, of which Mr. Brough was still a member.

The year 1868 was, of course, a landmark in the history of pharmacy, and the Conference which met at Norwich, August 18–25, was not unmindful of the fact. Membership was then 562, and Mr. Hanbury drew attention to "the cord of union" that was already drawing them closer together. The inaugural address summarised the year's contribution to pharmaceutical knowledge; it included methods of sublimation of alkaloids and subsequent examination under the microscope, the analysis of potable water, early clinical trials of conium, belladonna and hyoscyamus, the analysis of jalap and the introduction of cinchona into India. "Experiments on the therapeutic action of drugs, to be of real value, must be carried on with so many precautions, so much patience, and a considerate attention to so many collateral circumstances . . ." words which would have been equally appropriate in 1958.

Conditions for Registration

With the Pharmacy Act so much in the news it was natural for the Conference to go into a committee of the whole house, as it were, in order to consider its clauses and implications step by step under the guidance of the Pharmaceutical Society's secretary and registrar and Mr. Carteighe. It was emphasised that an established chemist and druggist wishing to be registered without examination must provide evidence of actual practice in the compounding of prescriptions of duly qualified medical practitioners. The "modified examination" was to be of a thoroughly practical nature and it still awaited confirmation by the Privy Council.

The list of papers was notable for two contributions from the chairman's famous colleague: Dr. Flückiger, Berne. Mr. J. C. Brough's paper on "Narcotine" reviewed the researches of Matthiessen and Foster, and it was illustrated by specimens of the principal decomposition products. A second contribution from Mr. Brough described an improved differential thermometer, also due to Dr. Matthiessen. The original form by Leslie was unsuitable for many experiments for which the new modification, with its pendent bulbs, would prove useful.

That Conference of 1868 was evidently enjoyable, and the Norwich chemists entertained many of the visitors in their own homes. The exhibition of objects relating to pharmacy provided an indication of the increasing interest.

In 1869 the Conference met at Exeter, again under the presidency of Daniel Hanbury. The executive committee was able to report a membership of 647 and an excess of income over expenditure of nearly £80. It must have been easy to like Daniel Hanbury, with his simplicity of life, charm of manner and the learning which he carried so lightly. In his introductory remarks—it was the secretaries, he said, who insisted on calling them an address—he reviewed the effects of the recent Pharmacy Act. He himself had experienced no great difficulty in carrying out its provisions, whilst the laboratories at Bloomsbury Square had become hives of useful activity. The "modified examination" had its critics but it was a significant fact that 600 candidates had passed it during the first six months of that year. Britain had adopted poisons regulations much later than in France, as witness the first Arsenic Act of 1851 in comparison with French regulations of 1353.

During the year Mr. J. E. Howard had published useful researches on cinchona, M. Lefort on a possible rival to Brazilian ipecacuanha, and it was hoped that indigenous drugs would receive more attention. Was the drying of herbs before processing preferable to the expression of the fresh juice and subsequent preservation by the addition of alcohol? Dr. Schoonbroodt, Liége, had investigated twenty-nine plants from that point of view and preferred the fresh material when possible. There was an increased temptation to adulterate olive oil, whilst precipitated sulphur was too often two-thirds sulphate of lime.

Mr. D. Hanbury *Mr. F. B. Benger*

Mr. Edward Smith, Torquay, elaborated a previous thesis by Mr. Giles, Clifton, on pharmaceutical responsibility and its remuneration. He pleaded for a levelling up of prices for dispensing, and thought that the number of doses provided a fair guide. The work had been much more profitable and much less onerous in the old days when dilute draughts were in vogue. He advocated price-marking on prescriptions, not with a view to charging a little less, but to prevent discrepancies. The new Act had put all chemists in the same boat and it was the ideal moment for a radical change in pharmaceutical manners. The discussion which followed tended to emphasise differences rather than compose them. Several towns had made local experiments in price arrangement, though with varying results. Mr. Carteighe asked for greater consistency, and supported Messrs. Smith and Giles. The chairman summed up by saying that there was "nothing like consistency in our system and therefore we could not have anything like consistency."

Foundations of the Year-Book

That Conference was particularly noteworthy as laying the foundations for the "Year-Book of Pharmacy." There had been an independent volume which had achieved no great success, and the *Proceedings* of the Conference had been printed in simple form for circulation in a small way, but the time was ripe for a bigger and better projection of its work and aims. The subcommittee appointed to consider the matter included Professors Bentley and Attfield and Messrs. Brough, Carteighe and Reynolds. After comparing alternative ways and means, the subcommittee recommended independent publication, the model to be the *Proceedings of the American Pharmaceutical Association*, but with fuller abstracts of current literature. The initial print order was for 1,000 copies, to be ready for the autumn of 1870. A paid editor would be supported by a small honorary publications committee. The report was adopted after a brief discussion.

Education in the Provinces

Also notable was the contribution of Mr. Schacht on the subject of provincial pharmaceutical education. After summarising the teaching facilities available throughout the country he maintained that, as a body, they had created a demand for education but had done little indeed in the way of supply. Outside the metropolis, which was specially favoured, there was dire need. There were seventeen local associations and he tabulated their local means of instruction, declaring them pitiably inadequate. The brighter spots were Manchester, with an average attendance of fifty pupils, Leeds, Liverpool and Sheffield, whilst Newcastle-on-Tyne was especially fortunate in its association with Durham University, where a chair of pharmacy had been established. Of 232 towns in which there were science classes of any sort, only thirteen included chemistry and botany for the 1868–69 session. As a personal experiment during the previous winter Mr. Schacht had invited local assistants and apprentices to join with him as fellow students, as he modestly put it, and together they had read Roscoe's "Elementary Chemistry," with a little organised home work. An examination had been held in June under conditions as near normal as possible and the papers had been sent to Dr. Attfield in London for marking. Needless to say, they had been dealt with fully and fairly. The whole affair was a simple but delightful example of self-help, and the Conference rose to it with special warmth. Mr. Hanbury could hardly contain his admiration and pleasure. In the general discussion Mr. Brough explained his method of conducting the *C. & D.* "Corner for Students"; he found the response gratifying but hoped that more universities would follow Durham's excellent example.

The Conference continued to do good work in the cause of purity in drugs, the subjects being on this occasion ginger and cinchona. Of thirty-two samples of pulv. zingib. only nine were found to be genuine. One specimen, labelled "extra strong," proved to be mixed with flour and capsicum. In the samples of powdered "bark" there were twelve genuine out of twenty-seven. In conclusion Mr. W. Lascelles Scott remarked that "In two or three instances my results have been confirmed by the confidential admissions of the vendors themselves, who have duly promised to amend their ways; they will doubtless join the British Pharmaceutical Conference as soon as their consciences are *quite* clear."

On August 19, the Exeter chemists gave a dinner to Conference visitors, and Mr. Hanbury, in replying to a toast of success to their joint efforts, was able to announce a gift of fifty guineas from Mr. T. Hyde Hills in the name of Jacob Bell and himself. Of that sum £10 10s. would be applied to the purchase of books for the chemists' library in Exeter. The following day the work of the Conference was pleasantly rounded off with an excursion to Torquay.

The Liverpool Conference of 1870 registered a notable advance, thanks to the enthusiasm of the executive committee, backed up by the local Chemists' Association, which was celebrating its own coming-of-age; it had been founded in 1849 as a direct result of a visit from Jacob Bell. The executive had organised the work for the new "Year-Book" which was to appear later in the autumn, planned a systematic propaganda scheme for new members, and arranged for the appropriate disposal of the Bell and Hills Library Fund. Mr. J. C. Brough had been appointed Editor at a salary of £100 a year and the publications subcommittee included Messrs. Hanbury, Stoddart, Ince, Carteighe and Groves, with Dr. Attfield as secretary. Energetic canvassing had increased the membership to 1,500 and they hoped for more

when the "Year-Book" was in circulation and affording tangible evidence of value for money. Unfortunately Mr. Brough was taken seriously ill, and as he was unable to complete his editorial work the task was handed over temporarily to his friend Joseph Ince.

In his presidential address Mr. W. W. Stoddart, Bristol, referred to the many chemical syntheses that had rendered meaningless the old distinction between organic and inorganic. Alcohol, sugar, acetic and oxalic acids had all been prepared artificially. Also, very recently, there had been the potentially useful dye, alizarine, which might well replace the natural plant product. The vegetable alkaloids had so far proved resistant, but for how long? Huxley was quoted with approval when he advocated the abolition of materia medica studies from the medical curriculum—"I cannot understand the argument for obliging a man to know all about drugs and where they come from. Why not make him learn about cutlery because he uses knives?"

Mr. Barnard Proctor

Mr. Schacht was unable to attend that Conference but his influence was obvious in the paper on apprenticeship by Mr. Benger and in the general discussion on pharmaceutical education. More and better preliminary education was considered to be the key to future advancement. The differences between English and Scottish methods of dealing with apprentices were described by Mr. Mackay. In Scotland the apprentice did not live in; his parents paid no premium but they were asked to pay for attendance fees for classes in chemistry and materia medica, whilst the master allowed the necessary time. A paper from Australia outlined a scheme that must have simmered in the mind of many a budding pharmacist in his callow days. Mr. Hood, Melbourne, had the good fortune to possess some virgin ground which he divided into six plots to grow poppies for opium production. He used different manures and varied methods of cultivation and endeavoured to analyse the results. The eventual yields of morphine (about 4 to 7 per cent.) were not too good but he looked forward to doing better. Meanwhile he was obviously having a happy time. The great "mag. cit." problem was again in evidence, and the Conference committed itself to the following resolution: "The term 'citrate of magnesia' as applied to the ordinary granulated preparations of commerce is a misnomer and ought to be discouraged as inconsistent with the true interests of pharmacy." Thomas Greenish found that many of the so-called flax lints of commerce were admixed with cotton, and his examination of the two fibres under the microscope may well have pointed the way for his young son, then a boy of fifteen, who was to achieve such eminence in that field. Another significant name, also elected at the previous Conference, was W. Martindale, "Dispenser and Teacher of Pharmacy at the University College Hospital." to quote his official title. He was seeking for the ideal pill excipient, but did not find it.

A Variety of Attractions

An excursion to Halton Castle, visits to local soap and alkali works, and a comprehensive exhibition were included in the many attractions organised by the indefatigable Liverpudlians. In the exhibition were the twenty-eight designs for a dispensing counter submitted in a *C. & D.* competition, and "A Century of Old Books," for which Joseph Ince was largely responsible.

Towards the end of 1870, a little later than originally planned, "The Year-Book of Pharmacy and Transactions of the British Pharmaceutical Conference" duly appeared as a joint production of the two Editors. The continued illness of Mr. Brough made further collaboration impossible, but he had set a good course. "The design has not been hastily conceived, nor has it been adopted without due consideration. A reasonable hope is entertained that it may prove useful." (Mr. Brough had a great liking for that word—it was indeed the keynote to his work.) That first of the long series of "Year-Books" has many interesting pages which literally clamour for quotation. The section on American pharmacy is a good example, with its note on "elegant" pharmacy, then a new idea on this side of the Atlantic. It was defined as "the art of preparing drugs for the use of physicians in such a manner that they shall be more readily assimilated, or less disagreeable in taste, or more convenient in form." American physicians regarded such preparations with the keenest interest, and the skilful pharmacist had only to submit his speciality to the profession with an explanation of its merits, "when they at once order it in their prescriptions, with a confidence that is equally honourable to both parties." The date, we must repeat, was 1870. The Editors felt that they had much to learn from the Americans, but they refused to follow them in one respect, they would not "bow down and worship glycerine." Another tempting section which was, perhaps, too good to last, included "personal notices" of Michael Faraday, John Graham and (equally interesting) Henry Deane, by himself, with a choice editorial addendum—"how infinitely more we delight to offer a laurel wreath to his living excellence rather than a hundred immortelles to his memory." Quite simply and naturally Mr. Deane described his early Quaker training, his apprenticeship at Reading, his good fortune in entering the Bell Pharmacy in Oxford Street, and the eventual establishment of his own business at Clapham.

In view of the increased membership, 2,000 copies of the "Year-Book" had to be printed, and extra secretarial assistance was needed by Dr. Attfield. A new Editor was appointed; Mr. C. H. Wood, F.C.S., and he had made good progress with the 1871 edition by the time the Conference met in Edinburgh in August. The annual report indicated a balance in hand of just £50, but Dr. Attfield brushed aside a suggestion that the subscription of 5s. should be increased to 7s. 6d. The correct approach, he said, was for them all to work to secure more members. Actually, 300 new names had been enrolled during the current year, making the total effective strength about 1,900. Mr. Stoddart was again in the chair and in his address he claimed for chemistry the first place in the hierarchy of science. Botany was useful, no doubt, but without the guidance of chemistry scientists would be lost indeed. (Perhaps it was a fortunate accident that kept Professor Bentley away.) During the year the secretary, Dr. Attfield, had put them all in his debt by his exposition of modern chemical nomenclature. Chloral hydrate was welcomed as a valuable addition despite the mishaps which had attended its incorrect use. There was a passing reference to the Franco-Prussian War and the sufferings of French colleagues, and Mr. Stoddart showed that he could quote Horace as aptly as Joseph Ince. As for the apprenticeship question, there were two sides to it. The master should be able and willing to instruct, or refer the lad to someone who could; the apprentice should already have a good, solid foundation of general knowledge on which to build. Mr. S. R. Atkins followed the same line in his paper on apprenticeship and there was the customary

Mr. H. B. Brady

brisk discussion, enlivened with personal reminiscences. The two papers on chloral hydrate indicated that the manufactured product was being steadily improved. Daniel Hanbury read a paper from Professor Flückiger on the crystalline principles in aloes, whilst Messrs. T. and H. Smith contributed notes on aloin. Considerable variations in linseed and linseed meal were disclosed by Mr. T. Greenish and by many members in the general discussion.

During the evening of August 1 there was a conversazione organised by the local Committee in the Museum of Science and Art, with the band of the ninety-third Sutherland Highlanders in attendance, a lantern lecture on Scottish scenery and architecture and what is described as "an American summer beverage-making machine." An unexpected name in an impressive list of guests was that of the Emperor of Brazil. The Executive was entertained to dinner on August 3, and there was a goodly company. Dr. Alexander Wood, responding to the toast of the Colleges of Physicians and Surgeons of Edinburgh, hoped for an integration of pharmaceutical and medical education so that each profession could help the other. He confessed himself a convert; from an antagonistic position he had come to learn "that you pharmacists have great ends to serve and you are serving them in an honourable manner." In some ways "you have set us medical men a great example. You have no old, riveted prejudices to contend with."

By the time of the tenth Conference, which met at Brighton on August 13, 1872, the "Year-Book" was recognised as an "established success," meeting a real need with its interesting summary of all that was new in pharmacy. The Executive had a good report to make, though there was no great increase in the membership, and the credit balance had dipped slightly. A munificent gift of £200 from Mr. T. Hyde Hills made the Bell & Hills Library Fund secure for some time to come. The Conference seemed to be in the mood for self-congratulation, but the new president (Mr. H. B. Brady, Newcastle-on-Tyne), soon sounded the notes of caution and criticism. He was especially critical of the "perpetually swelling assets of the annual balance sheet" of the Pharmaceutical Society. Surely there should be more constant and consistent investments in scientific research and intellectual wealth. In Germany there were "laboratories open on terms that can debar no one from entering who desires to work in them"—hence the proud position of Germany in the scientific world. The Conference had done something; to be really successful there should be much more co-operation from members generally.

It was a most suitable introduction to a day devoted to the subject of pharmaceutical education, with Professor Attfield taking the leading rôle. Beginning quietly, almost apologetically, as a professional teacher and likely to be prejudiced, he nevertheless felt impelled to speak the truth as he saw it. It was often said that the Pharmacy Act of 1868 had created a demand for education, whereas it had done no such thing. "Such a demand ought to exist; under improved organisation it will exist; but it does not yet exist." Then came a detailed, chronological record of pharmaceutical education from its birth in 1841, the gradual evolution of the School of Pharmacy in Bloomsbury, the frequent attempts to stimulate local interest by grants in aid (all of which had come to nothing). Even the attendance at Bloomsbury did not equal expectations. Jacob Bell's legacy of £2,000 had enabled the Society to erect the present laboratories over the original House, and the School, although in London, was not for London but for Great Britain, and three-quarters of its pupils were from the provinces. Coming to the present, what had the 1868 Act done for education? Nothing. Worse than nothing. The examination devised for assistants was considered sufficient for principals. Compulsory examination had created a demand, not for true education, but for mere ephemeral information—that hideous usurper: CRAM. The methods of the crammer were detailed in all their depravity. It would seem that, if stocks and pillories could have been set up in Bloomsbury Square, with summary jurisdiction from No. 17, tenants would not have been lacking. Dr. Attfield believed in freedom in nearly everything but education, because that led directly to cramming. What he did want was for the "Minor" to be made thorough and to be preceded by a reasonable preliminary standard of general education, practical training and certified attendance at a recognised school of pharmacy. Even in the 1870's it was a matter of common knowledge that "our Bell scholarships do good to all other professions except our own. A Bell scholarship is too often the lever by which a worthy, clever and ambitious young pharmacist so elevates himself that his talents are lost to pharmacy altogether." There would be no difficulty in manning the schools of pharmacy of the future, he concluded.

The same theme was taken up with variations by Messrs. Schweitzer, Proctor and Atkins before lunch, and the afternoon was spent in a discussion which revealed sharp differences of opinion but one consistent aim: the advancement of pharmacy.

The fare was more varied on the second day, with fifteen papers in all, including an excursion by Daniel Hanbury in search of Calabrian manna, a discussion on tinct. ferri perchlor. which led many members to confess to slight departures from the strict letter of the B.P., 1867, and a practical note on pill coatings. Henry Groves described some interesting rambles around Florence, alone and in company with Daniel Hanbury, investigating the sources of orris root. Altogether, a good day, completing a useful Conference.

At the close of its first decade, the British Pharmaceutical Conference found itself with a balance in hand of £47 4s. 1d., a chastened idea of its responsibilities, a "Year-Book" with a circulation of 2,000 copies, and a good Yorkshire welcome awaiting it at Bradford in 1873.

REFERENCES.—In compiling the above notes I am indebted to early volumes of the "Pharmaceutical Journal," "THE CHEMIST AND DRUGGIST," and the "Year-books of Pharmacy" from 1870 onwards.

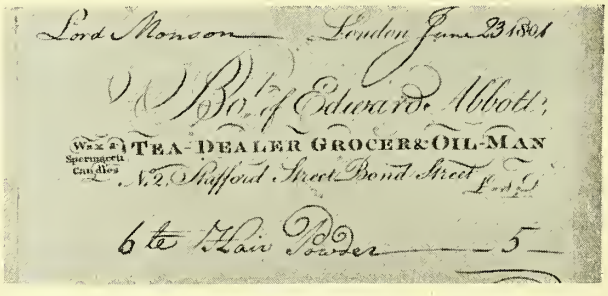

STAMP OFFICE

CERTIFICATE.

Hair Powder Annual Duty, 1801.

1801.

This Certificate will expire on the fifth Day of April 1802.


Lord Monson — London June 23 1801

Bo^t of Edward Abbott,

TEA-DEALER GROCER & OIL-MAN

Wax & Spermaceti Candles

N.2 Shafford Street Bond Street

6 lb Hair Powder — 5 —

A LUXURY TO BE PAID FOR: The Lord Monson is shown by the documents here reproduced to have paid in 1801 a "hair powder annual duty" for his butler and to have bought the powder for him in 6-lb. quantity from a "tea-dealer, grocer and oil-man." The originals are in the Lincolnshire Archives Office.

Avicenna Reappraised

" That most excellent of the moderns, the Philosopher of the East, the Proof of God unto his creatures, Abu' Ali al—Husain ibn' Abd Ullah ibn Síná."

LESLIE G. MATTHEWS

MEDICINE is not a difficult science, and naturally I excelled in it in a very short time, so that qualified physicians began to read medicine with me." So runs Professor Arberry's translation of the autobiography dictated by Avicenna to his companion and pupil, Juzjani, recording the subjects studied by his master at the age of sixteen. Having mastered in his early teens the natural sciences and metaphysics, including Euclid and logic, taking in some law by the way, Avicenna, whose phenomenal prowess may have been overwritten by his pupil, was determined that no sphere of current knowledge should remain unexplored by him. Born in 980 A.D. at Bokhara in Persia, he lived at Hamadan, and died in 1037, aged 58, without ever having left the confines of his country. The Islamic millenary of his birth was widely celebrated in 1951, in Cambridge by a course of lectures under the auspices of the Faculty of Oriental languages, since published under the title " Avicenna: Scientist and Philosopher." Only in 1958 a Persian scholar (Dr. Soheil M. Afnan) published a full-length and sympathetic study of the man and his works, a study likely to remain outstanding for a long time as a source of knowledge of contemporary philosophy. Throughout his life, perhaps because of his family upbringing, Avicenna seems to have been dogged by a heterodoxy ill-attuned to the Islamic faith. As a result, he was often in flight or hiding from purist rulers. princelings of the day. They, though recognising his virtues both as physician and as philosopher, and making use of him in both capacities—once he was appointed vizier for a period—were either afraid to retain him because of outside religious opinion or decided he might dissuade others in their retinues from a strict adherence to the true faith.

In the provincial society in which Avicenna grew up in Bokhara his father, as a local administrator, was able to get teachers for him, and it was not long before the pupil was setting tasks for his masters. Iran, or Persia, had known, not so long before, the influence of the Caliphs, some of whom, and particularly Haroun El Raschid (c. 800) were far-sighted enough to attract to their courts not only scholars of the day—many of them Nestorians dispersed from Syria and the Levant—but persons skilled in tongues and apt at translation. Hence Avicenna, having successfully treated the ruler of Bokhara, records (through his pupil) his great delight at the honour accorded him of access to the royal library—rooms filled with the works of early authors, many of them Greek treatises. He used them to the maximum to extend his well-stocked mind.

Patronage and Pursuit

Not long after that episode his journeyings began. He found an appreciative patron but his own fame came to the notice of his patron's overlord, the Sultan Mahmud, styled " Conqueror of India and Khorassin," a man determined that his court should be the centre of science and learning. Avicenna and some of his friends decided to flee; Mahmud, now more keen than ever, instructed an artist to draw Avicenna's portrait and make forty copies for distribution so that he might be traced. The quarry was tracked down but fled again, this time to Ray (Raiy), then named Rhages, a local capital, the traverse of roads across the Persian plain. Today Ray is a manufacturing suburb of Teheran, but the old city is deserted, largely a mound of rubble where footings of mediæval walls and buildings may still be seen. At Ray under happier conditions Avicenna not only continued his studies but commenced his important philosophical work " al Shifa " (The Healing). Family difficulties of his patron made him leave Ray for Qasvin, and finally he moved to Hamadan, an important trading city and intellectual centre. There Avicenna lived in a dual capacity, in the morning an attendant upon his Ruler and as Minister of

State or Vizier, for the rest of the twenty-four hours as doctor, scholar, inveterate debater and boon companion. When writing he could turn off fifty sheets in reply to a query, or equally spend the whole night fasting if a difficult passage needed that amount of concentration. Trouble of one kind or another pursued him; his next and perhaps happiest sojourn was at Ispahan, where under a generous ruler he lived life to the full.

Of all his medical writings, the "Canon of Medicine" is the most famous. Such are the niceties of the Arabic tongue that, turned into English, the titles of some of his other books are intriguing—"The Book of the Origin and the Return," "The Book of Colic." "The Book of Guidance." "The Book of Equitable Judgment." Though he is credited with more than 200 works, scholars are inclined to the view that hardly more than 100 of the books attributed to him are by Avicenna himself. His death in Hamadan in 1037 A.D., was reputedly of a colic, made the more severe by heavy doses of infusion of celery seed. (Ducastel, quoted by Elgood, suggests that the real cause of death was a long-standing cancer of the stomach). In Hamadan, may still be seen the shrine that houses the lettered tombs of Avicenna and a contemporary poet. Arberry's impression of him is of a man "of almost superhuman endurance . . . with a memory equal to the greatest on record . . . a formidable adversary indeed in the battle of wits and words; yet a man of gay and hearty temper, a good companion with the wine-cup . . . a great philosopher and scientist . . . a deeply religious man. . . ."

Contemporary Acclaim

Avicenna's enormous contribution to all branches of learning was speedily recognised by his contemporaries and as gladly received by his successors. Not only did he enrich philosophical teachings, but music and poetry as well as medicine and the sciences attracted him. He wrote upon the therapeutic value of music and its effect upon the moods of man: ideas that are revived from time to time, fall out of use, and have a further life as enthusiasm triumphs over lethargy. His place in Arabic philosophy—a broad descriptive term for the many disciplines it comprised—is clearly outside the present more limited field. Like all metaphysical disputants he was concerned with the problem of centuries—whether the world is eternal or created. Those interested in the opinions of the time on that and related topics will find their thoughts stimulated by reading Dr. G. M. Wicken's essay on "Avicenna and Some Aspects of his Work" and by Afnan's work mentioned earlier.

The speed with which Avicenna's writings were conveyed to the world outside Persia depended upon Arab conquests and Arab colonisation. The Arab entry into Sicily and Spain facilitated circulation of Arabic manuscripts. It was mainly due to the erudition of Arab-speaking Jewish scholars and physicians, and notably at Toledo, that translations into Latin were made and knowledge of Avicenna's works spread. "When it (the "Canon of Medicine") became known to the medical world it at once superseded all previous works on medicine" (Elgood). The Canon, a part of which was first printed in Latin in Italy in 1472, is divided into five books, the contents of which are, broadly,

(1) Anatomy and physiology, and the commoner diseases and their treatment (available in an English translation by O. C. Gruner);
(2) materia medica and pharmacology; a detailed compendium of simple drugs;
(3) pathology and particular diseases;
(4) systemic diseases;
(5) a formulary: recipes and methods of compounding them.

Once translations of the main books of Avicenna and Rhazes began to be circulated in the eleventh century, there followed a demand for the lesser-known works. Insistence by the Universities of Montpellier and Bologna on the study of Arab medicine as a prerequisite of authorised medical practice continued the spread of the new knowledge, since students went to those universities from most countries of Western Europe. The supremacy of the teaching of Avicenna and Rhazes is regarded by Elgood as a possible, though indirect, reason why so many fifteenth- and sixteenth-century Italian painters used arabic lettering and portraits of SS. Cosmos and Damian (canonised Arab doctors) as decorative motifs in their paintings.

It was the full tide of the renaissance that brought doubts about the infallibility of the Arabic corpus of medicine. The new Western learning made men careful to check it by the Greek texts now being distributed by means of the press. Had the Arabs added to or detracted from the original teaching of the Greeks? More important, was more knowledge to be gained by experiment than by continually ploughing the arid ground of the established texts? It was those stirrings of the mind and spirit that first questioned and ultimately overturned the formalist doctrines. Gradually the textbooks of the ancients, so long prized and so often quoted and requoted were replaced. The anatomy of Vesalins, the iatro-chemistry of Paracelsus, the revolutionary thinking of Harvey, each in turn obliged scholar and practitioner to rethink for himself the principles upon which the teaching of anatomy, medicine, therapeutics and pharmacy should be based. More often than not it was a new discovery that held the field.

The recognised virtues of Avicenna's "Canon of Medicine" were its recapitulation of existing knowledge, derived from Greek, early Syrian, Arab or Persian authors, and its combining of that with new matter—the outcome of clinical observation, new thoughts and ideas arising from experimental pharmacology of the time. Its defects, the acceptance, almost without question on its first introduction to Europe, of the statements of earlier writers, without attempt to check their accuracy. In the form as written, and translated into Latin, the Canon circulated from the twelfth century onwards throughout the Renaissance, keeping a certain place in the libraries and universities until the new anatomy of the sixteenth/seventeenth centuries proved too great a challenge. Avicenna's works had then to meet the kind of criticism that he himself had meted out to his contemporaries: he had castigated the alchemist, saying it was impossible to split up combinations of matter into more simple forms or elements. His plea for continuing the suppuration of wounds, as distinct from cleansing them, may have helped to keep back the practice of *débridement*, and if he regarded surgery as an art inferior to medicine he was not alone in his views, as witness the difficulties of our own barber-surgeons over the centuries. Wootton, in "Chronicles of Pharmacy" says that to Avicenna is attributed the use of silver as a medicine: "who gave it in the metallic state in tremor cordis and in foetore oris. He is also believed to have introduced the practice of silvering pills, with the intention of thereby adding to their efficacy."

Drug Classification

Examples of the classification of drugs and their uses are to be found in Book 2 of the Canon, which is summarised in translation by O. C. Gruner: namely the collection, preservation and preparation of herbal and other remedies, their properties, tests for purity, quality, action and antidotes. The second part of the book is concerned exclusively with medicines for the heart: "When two drugs are of equal power, the sweeter and more aromatic of the two will prove an efficient adjuvant." Around 700/800 drugs are mentioned, of which possibly one-fourth are still in use in pharmacy or in herbal remedies.

On the other hand Book 5 is a pharmaceutical compendium for the practitioner, containing formulas, actions and uses, with methods of preparation for theriacæ, troches, confections, hieræ, electuaries, pills, clysters, syrups, lohochs, oils and plasters. The exact directions stipulate the temperature (medium or severe heat). Current interest attaches to the recommendation that small pills, for cough, may be used

sublingually: "ponat sub lingua sua ille qui vult dormire una aut duas."

About the testing of drugs Avicenna held sound views. He laid it down that knowledge of the virtues of medicine comes to us in two ways: by experimentation and through reasoning or deduction. He postulates seven rules for testing a drug:

The medicine must be free from any acquired quality due to accidental heat or cold, and in fact, free from any accidentally acquired quality.

The disease being treated must be simple, not obscured adventitiously by other conditions, otherwise it is impossible accurately to evaluate the effect of the remedy.

The drug must be tried in two diseases, to obviate the accidental cure of one disease only.

The "quality" (hot, cold, etc.) of the disease treated must be in line with that of the drug being tested. Better to start with the disease in a weak strength and thereafter use the drug in stronger attacks of the disease.

The timing of the test and observations is important, again to distinguish results arising by accident from those due to the qualities of the drug under test.

The results from parallel trials in several cases should be observed. The effect might be accidental if reliance were placed on one result only.

The experiment must be done in the human body: an experiment on an animal (e.g., a lion) by itself can be misleading and, since animal and human bodies are dissimilar, a like action in both cannot be inferred.

The details end, in Latin, "Iste sunt canones," etc.

But for the necessity, as then seen, of having to take the "humours" and "qualities" into account when carrying out the experiment, and the absence of tests for chronic toxicity and side effects, now standard in pharmacological work, Avicenna's conditions, severe and yet sensible enough to have given results, could have led to the use of more rational materia medica long before that in fact took place. Some of the conditions stipulated have an applicaction today, even to consideration of different constitutional types of persons, though we may not use the same classification as the ancients. Sargent, writing in the *British Medical Journal* (October 25, 1958), refers to differences in doses of sedative drugs needed by the "strong excitory" epileptic or the "weak inhibitory" hysterical patient, and adds "Unless these large individual differences in response to drugs are recognised, the proper use of sedative drugs can be very difficult to learn, and the results obtained with standardised dosage can be most misleading."

Nowadays the patient, the doctor, and perhaps the pharmacist enjoy the benefits of a therapeutic *régime* derived in large part experimentally instead of empirically, the experiment being tempered or even guided by a certain amount of deduction, thereby conforming closely to Avicenna's dictum on the means of knowledge of drugs.

The anonymous translator of Pomet's "Compleat History of Druggs" (London 1737) starts his preface with the words "The knowledge of simple Druggs is a study so agreeable, and so exalted in its own Nature, that it has been the pursuit of the finest Genius's in all Ages." In that pursuit Avicenna not only joined most earnestly, easily outdistancing his peers, but his works maintained his pre-eminence for centuries as one of the "finest Genius's in all Ages."

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PHARMACY IN LITERATURE

The nineteenth century produced a number of instances of pharmacy being mirrored in the pages of literature. Little has been published in English on the subject save for discussions on specific authors, and the author here endeavours to fill a gap.

JOHN K. CRELLIN

PHARMACY'S position in society is reflected in literature in numerous references to aspects of the profession. Those glimpses of the craft, especially when they present the views of the public on pharmacy, are seldom well developed in histories, biographies and autobiographies written by persons who have served in the ranks of pharmacy, and the second and third of the classes of work mentioned are often so eulogistic or self-centred that they give a biased impression of the state of pharmacy.

Precise and generally accurate pictures of pharmacy, usually of pharmacy in the shop, are repeatedly to be found. They are frequently written by authors who have gained a more than average acquaintance with pharmacy. though inaccurate accounts, too, are not infrequent. They naturally differ according to time and place—from, for instance, the era of the company of "Master, Wardens, and Society of the Art and Mystery of the Apothecaries of the City of London," formed in 1617, to the television-aided commercialism of the present day; or from the concession pharmacies of Germany to the drug stores of the United States.

The Bible gives little information on pharmacy, in spite of a number of references to an apothecary (perfumer in the Revised Standard Version) save that a recognised personage was the dealer in spices[1] and ointments.[2] In the *Arabian Nights*, a druggist appears in person in the "Tale of the Singer and the Druggist." Certainly the story does not portray him—his wife repeatedly makes love to the singer while he attends to the shop—as a figure to be envied. Plots based on the love-sick pharmacist* have been popular. O. Henry, the American master of the short story, who himself had had practical experience of working in a drug store,[3] depicts both Ikey Schoenstein, the drug store night clerk in *The Love-philtre of Ikey Sehoenstein*, and Samual Tansey, the clerk of the cut-rate drug store in *The Enehanted Kiss*, as being exceptionally timid in their courting. Such mild satire concerning romance and the pharmacist also finds itself in two operas, Donizetti's *Il Campanello* (The Shop's Bell) and Haydn's *Der Apotheker*.

Such light hearted amusement at the expense of pharmacy gives place to harsher remarks in a number of English works levelled at the practitioners of pharmacy. Complaint and satire are noticeable features of mediæval literature, and medicine, along with most other trades and professions, came in for its fair share. In presenting opportunities for physicians to abuse their responsibilities, medicine has been open to criticism. Until the middle of the nineteenth century, and along with the apothecaries, the pepperers and spicers, etc., played a large part in the drug trade. A situation arose whereby pharmacy must have suffered from complaints against itself, the merchants and the physicians, creating a basis for derogatory remarks by an author.

* "The Love-sick Pharmacist" is the title of an anecdotal picture painted by Carl Spitzweg.

Among early criticism of the physicians may be cited a poem on *The Evil Times of the Reign of Edward II*[4] and *Piers the Ploughman*. In the latter work the spicers are represented as an unsavoury group by their giving refuge to Liar,

" Spiceris spoke with hym, to aspire here ware, for he coude on herc craft, and kneugh manye gommes."[5]

That all was not well with early pharmaceutical practice is to be surmised from Caxton's famous book, *Game and Playe of the Chesse* (first published 1474). In the chapter on " phisiciens spicers and Apotyquarys " there is outlined an ethical practice of pharmacy; the relevant section begins with

" And the espicers and Apotecayres ought to make truly suche thynges as Is comanded to them by the physicyens/ And they ought taccomplisshe theyr billis and charge curyously wyth grete dilygence/ that for none other cause they shold be ocupied but in makynge medicynes or confections truly."[6]

Denigrating comments are often allied to the mystery and evil of poisons and old obnoxious drugs—a reminder of the age-old association of malady and sin. A typical hint of the universal and eternal dislike of ancient and smelly drugs is to be found in the lines

" A fustie Potticaire, euer at hand with his fustion drugges, attending your pispot worship."

said by a merchant to Doctor Dodypoll, his rival for the hand of Cornelia in *The Wisdom of Doctor Dodypoll* (1600).[7] It is, however, Shakespeare whose contempt for the apothecary heightened previous criticism to a veritable tradition of the weak, poverty-stricken apothecary.

" I do remember an apothecary,—
and hereabout he dwells,—whom late I noted
In tattered weeds, with overwhelming brows,
Culling of simples; meagre were his looks,
Sharp misery had worn him to the bones;
And in his needy shop a tortoise hung,
An alligator stuffed, and other skins
of ill-shaped fishes;"[8]

Kremers has written a full and excellent account of Shakespeare's " Caitiff Wretch "[9] noting plays, usually without an apothecary but of a similar theme (namely two lovers and a drug with an action simulating death), that were precursors to *Romeo and Juliet*. He also quotes later authors who used or borrowed Shakespeare's description—Otway in his *Caius Marius*, Richardson with his *Clarissa* and Dickens.

Dickens was even more militant against the profession than Shakespeare or that other Elizabethan writer Ben Jonson, who likewise used the London scene as a setting for satire on certain persons, including the apothecary. Science appears to have made a rather poor impression on Dickens, and the vague and indeterminate position of the apothecary, especially with the large numbers of chemists and druggists dispensing and compounding, can hardly have contributed to a favourable impact in the early nineteenth century. Lawall illustrates that[10] with a quotation from *David Copperfield*, where Sheerforth says,

" I saw a little apothecary there, surgeon or whatever he is, who brought your worship into the world."

Similarly in connection with the illness of Mr. Jonas Chuzzlewit (in *Martin Chuzzlewit*),

" Now there being no medical practitioner actually resident in the village, but a poor apothecary who was also a grocer and general dealer, the landlady had, upon her own responsibility, sent for him."

There is thus in much English literature a continuity of degrading remarks against those connected with drugs—due, among other things, to abuses such as selling worthless drugs and to the mystery and even awe that surrounded the medicaments and disease. Certain writers, notably Shakespeare and Dickens, highlight the quarrel between physician and apothecary, the latter having gradually usurped the physician's province of diagnosing and prescribing during the seventeenth century. That quarrel, reaching a climax at the turn of the century, left its mark in literature most prominently, perhaps, in two examples so often quoted by pharmaceutical historians, namely Garth's mock-heroic poem *The Dispensary* (1699) and in the writings of Alexander Pope, who sided with the physicians in saying:

" So modern 'pothecaries, taught the art
By Doctor's bills to play the Doctor's part,
Bold in the practice of mistaken rules,
Prescribe, apply, and call their masters fools."[11]

Perhaps the main reason for criticism and satire is that the dilemma of the apothecary or pharmacist, etc., in belonging to a profession that was often little more than " a handmaiden for the physicians," and at the same time being a tradesman, to whom profit is a main concern, has at times been obvious even to the layman. In Germany, where the apothecary has been held in high esteem for many years, the tone of passages with a pharmaceutical flavour is consistent with that point of view. Even so Kremers and Urdang have written that

" It is noteworthy that [the] scientific endeavour of the German apothecary at times made him a questionable figure and caused him to be a target of literary derision. He stood and stands between trade and science. Particularly in Germany, with its very precise class distinctions, sharply differentiating socially between tradesmen and scientists, this hybrid condition was bound to create tragicomic situations."[12]

Though more true to the situation in Germany than in, say, Britain, the tragicomic situation is not confined to German literature. The pharmacist in love, which has already been instanced, is but one of many satirical digs found in stories from a variety of countries. Satire, with a touch of levity, is not always far from a feeling of regard for the pharmaceutical practitioner. With his special knowledge and skills —when they are not scorned as superficial and inadequate —he is clearly essential and of value to a community and consequently recognised as having a social status on a par (or nearly so) with that of the physician, lawyer or clergyman. The country, or provincial, friend of the family apothecary has been able, more readily than his large town colleague, to gain respect and status. His respectable image is duly represented in literature. Kremers puts in perspective the social position of apothecary M'Grady in the Irish story *Handy Andy* by Samuel Lover.[13] The tale takes place in the first half of the nineteenth century and Kremers shows that M'Grady compares favourably with the doctor, though his mercenary character is a blot on his copy-book.

Mystery and Dolour

The mystery and doleful nature of some aspects of pharmacy has been alluded to. Time and time again the pharmacist is described along with his musty shop, the two seemingly as inseparable as bees and a honey pot. James Joyce, in his celebrated *Ulysses*, creates a graphic picture and adds effect by linking pharmacy with another mystery-shrouded group: the alchemists.

" The chemist turned back page after page. Sandy shrivelled smell he seems to have. Shrunken skull. And old. Quest for the philosopher's stone. The Alchemists. Drugs age you after mental excitement. Lethargy then. Why? Reaction. A lifetime in a night. Gradually changes your character. Living all the day among herbs, ointments, disinfectants. All his alabaster lilypots, mortar and pestle. Aq. Dist. Fol. Laur. Te. virid. Smell almost cure you like the dentist's door bell. Doctor whack, He ought to physic himself a bit."

As the practices of pharmacy change, so the public's image is modified. A. Rudolph emphasises that in his article " The Pharmacist in Recent American Fiction," stating that

" He [the pharmacist] has now become, in the hands of the American story writer, a normal man possessed of the common faults and virtues of his neighbours and is surrounded by no mystery whatever."[14]

Rudolph gives one particularly interesting example in Dorothy Canfield's short story *A Fair Exchange* (1918) where the druggist is introduced as a typical business man and one worthy to represent the big business enterprises

for which the U.S. is noted—again a preoccupation with the trading aspect of pharmacy. At around the same time Agatha Christie, in *The Mysterious Affair at Styles* (1921), endeavoured to represent the profession on a factual basis with references to the poisons book. In a more recent story, *Black Midas* (1958) by Jan Carew, pharmacy is clearly upheld as an occupation worthy to be followed. Although the mystery of pharmacy has disappeared, the unscrupulous pharmacist is unfortunately still prevalent. He is depicted in Philip Auld's *Honour a Physician* (1959), where a retail pharmacist buys from his customers, at cut price, items that have been obtained on prescription from another pharmacy!

We have already seen in Shakespeare and Joyce that the pharmacy, with its multitudinous materia medica, provides a fertile ground for description. The greater variety of merchandise of many modern shops makes *The Apothecary Shop* (1957) a fitting title to a miscellaneous selection of essays on literature by D. J. Enright. Possibly, however, Enright found the title from a passage by Thomas Mann, which he uses as an introductory quotation to his book.

Provender and Poison

> " A whole host and generation of youth, receptive, sound to the core, flings itself on the work of the morbid genius, made genius by disease: admires it, praises it, exalts it, carries it away, assimilates it unto itself and makes it over to culture, which lives not on home-made bread alone but as well as provender and poison from the apothecary's shop."

Pictures of English and Continental pharmacies often become mere enumerations of the drugs and equipment. American literature, on the other hand, provides abundant descriptions of the renowned drug store as an institution, with its soda fountain and sometimes a liquor store, two facets that contribute to its rôle of social and community centre (more notably in the small town). An early mention of the small community drug store is in James Fenimore Cooper's *The Pioneers*, while more recently William Faulkner in *The Town* (1958), throws some light on the management of a store. We read the interesting details as a result of a theft of

> " morphine and sleeping pills. That's what caused the trouble Ratcliffe said. They could have taken the money or for that matter all the rest of the store too except the prescription case, including the alcohol because Walter Christian, the Negro janitor, had been taking the alcohol, a drink at a time ever since he and Uncle Willy both were boys and first started in the store. . . . Besides that, the federal drug inspectors had been nagging and worrying at him for years about keeping the morphine in that flimsy wooden drawer that anybody . . . could prise open, even though it did have a key to it that Uncle Willy kept hidden under a gallon jug marked *Nux Vomica* on a dark shelf . . . so dark back there that even Walter never went back there since Uncle Willy couldn't have seen whether he had swept there or not."

Though certainly not to be taken as representative of American pharmacy the intimacy of Faulkner's account reflects the community atmosphere of many such drug stores and the responsible position of the druggist.

Mention of " morphine and sleeping pills " opens up the mention of drugs and poisons in literature. Here, in pharmaceutical matters, poetical licence has been extended to the fullest extent, more usually in the detective story. Arsenic, strychnine, hydrocyanic, carbolic, oxalic and mineral acids take their place with the mysterious drugs synthesised at the author's whim to remove a character who has perhaps become inconvenient to the plot. In contrast, Agatha Christie introduces pharmaceutical incompatibilities in *The Mysterious Affair at Styles*. They involve the addition of bromide powders to a solution containing strychnine.[15] References to drugs and preparations in literature may be of value in identifying the popular remedies of the respective period. For example, the novels of Scott are pharmacopœial in their abundance of drugs, from aqua mirabilis to wormwood. Dickens introduces, not unexpectedly, a commercial note with a celebrated nostrum of the eighteenth and nineteenth centuries: Daffy's mixture. It consisted of an extract of senna leaves with French brandy; that it was a potent preparation is evidenced by the following dialogue in *Oliver Twist*.

> " ' What is it? ' inquired the beadle. ' Why, it's what I'm obliged to keep a little of in the house, to put in the blessed infants' Daffy, when they ain't well, Mr. Bumble,' replied Mrs. Mann as she opened a corner cupboard, and took down a bottle and glass. ' It's gin. I'll not deceive you, Mr. B. It's gin.' "

Finally, the familiarity of many drugs to the lay person, and acquaintance with their pharmacological action, is shown and emphasised in the following striking metaphor by C. Morley in *The Man Who Made Friends with Himself* (1949).

> " There's no place you can be so surgically antiseptic as in a railroad station. I sat there, dangerous as a million units of penicillin and ground myself to a powder."

—a telling death knell to the " Art and Mystery of the Apothecaries."

Criticism and Recognition

This brief survey illuminates lay viewpoints on pharmacy. Numerous other works could be quoted, but they would fall broadly into the category either of adverse criticism or of recognition of the pharmaceutical practitioner, with his specialised knowledge, as a worthy and respected member of the community, though still, it may be, a fit subject for satire. Such a broad division underlines the dual nature of pharmacy, a duality so noticeable today. The views as given, however, are but a background to the greater detail describing the apothecary, apothecary-physician, chemist, druggist or pharmacist in relation to time and place, village, town and country, that will provide interest for the pharmaceutical reader. The works and authors producing the pharmaceutical anecdotes and pot-pourri are far too many to enumerate here, though mention may be made of authors who have been subject to review in relation to their pharmaceutical knowledge, namely Scott,[16] Eliot,[17] Kingsley[18] and Marryat[19] in English literature. Balzac's *Human Comedy* has been discussed by L. Warren[20]; and a thorough and extensive coverage of much of German literature down to the 1920's is to be found in Urdang's two books.[21] Last must be noted the series of articles by E. Kremers entitled " The Apothecary in Literature," dealing mainly, as the title suggests, with the apothecaries, etc., figuring in novels and miscellaneous writings.[22]

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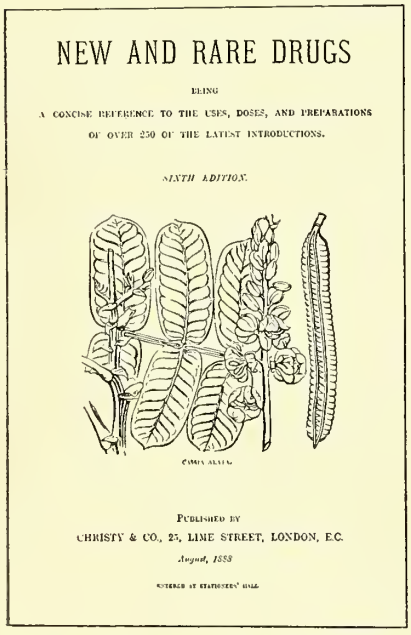
"ESSENTIALLY A FAMILY BUSINESS"

THOMAS CHRISTY & CO., LTD., IN ITS CENTENARY YEAR

A STRONG thread of continuity runs through the history of Thos. Christy & Co., Ltd., Aldershot, Hants—established 1860—despite vicissitudes, and in particular a major upheaval in the second year of the 1939-45 war. Founded to engage in commerce as "importers of new drugs and plants," the business has today a somewhat different, if logically evolved, orientation. Yet many of its nineteenth-century customers and suppliers are still in business relationship with the company. What makes that specially noteworthy is that in 1941 the company's then London headquarters were totally destroyed by enemy action, and in the transfer to a new home in the country, thirty-six miles from the capital, old friends could easily have been lost. That they were not is due to three factors—to the energetic attack of the survivors, in the face of immense obstacles, on the problems of reconstruction of the organisation; to the spirit of loyalty that existed, on the one side between the company and its clients, and on the other between management and staff (sixteen of whom uprooted themselves from their homes to help get things restarted in conditions that must have seemed desperate); and no doubt to the excellent service the company had always provided to its clients.


NEW AND RARE DRUGS

BEING

A CONCISE REFERENCE TO THE USES, DOSES, AND PREPARATIONS OF OVER 250 OF THE LATEST INTRODUCTIONS.

SIXTH EDITION.

PUBLISHED BY
CHRISTY & CO., 25, LIME STREET, LONDON, E.C.
August, 1888

Title page of a publication, issued by the company, that reached its sixth edition in 1888.

The company's first home was in Fenchurch Street in the City of London, where an office was opened in 1860. Thirty years later the firm removed to nearby Lime Street, and in 1900 to the premises at Old Swan Lane, Upper Thames Street, that came to an untimely end in 1941.

From bringing into the country vegetable drugs, of which it introduced to Britain a number previously unknown, the firm extended into the importation of proprietary medicines of overseas origin. By the 1920's it was a leading importer in that field, and among its successes have been those now universally known specialities Musterole, Grips, Kissproof cosmetics, Forhan's dentifrice and Nivea creme. In the 1930's the trend turned towards manufacture, and from 1947, the year of the opening of the present factory, even more so, and especially to the manufacture of toilet preparations and cosmetics.

The restart after the bombing had been in farmhouse buildings at Hale, nr. Farnham, Surrey, and by the end of the war a new staff had been built up whose ties were with the locality. The area was a pleasant one, and not unnaturally the decision was taken to remain there. It was not, of course, an industrial area, and the prejudices of local authorities and others had to be overcome before the new factory could be put up. Most of those who have visited it will agree that it enhances rather than lessens the amenities of the town in which it is set.

"Trophies" preserved

The present directors do not forget the origins of the business. A treasured possession of the company is a brass plate—shown as part of the title-piece to this article—from the company's early days, while in the board room ceiling at Aldershot is a beam rescued from the *débris* of the Old Swan Lane holocaust. Under it now sits a grandson of the founder, the present managing director, Mr. Cecil B. Christy, jointly with Mr. G. M. Roberts. A great grandson, Mr. John Glover, is also associated with the company. With such an amount of continuity, wedded to a tradition of adapting itself successfully to changing conditions, the company can look forward confidently to a future as bright as its past.

In the past decade many additions have been made to the original building. One of the most important aspects of the company's business today is the manufacture of a wide range of proprietary specialities. As a matter of deliberate policy there has been concentration on products in the range of toilet preparations and cosmetics. New products have been sought in many countries.

The company's many friends in the trade will wish it long-continued prosperity, unclouded by further catastrophe.

The company's board room at Aldershot, showing beam from the Old Swan Lane premises. At top of page is the brass plate which Thomas Christy set up outside the original offices in Fenchurch Street, London.

NORTH COUNTRY APPRENTICESHIP

Deeds and misdeeds on the way to a qualification

GALENETHICAL

THE year 1924 witnessed many important events. A Labour Government was returned to power in Britain for the first time. Lenin died. Hitler was sentenced to five years' confinement. And I commenced my apprenticeship in pharmacy.

Not that I had any longing to become a pharmacist. I had just declined a position at the local electricity works, from which in time no doubt I should have become an electrical engineer, when I heard that the largest pharmacy in the city was seeking another apprentice. Plunging the inhabitants of the city into darkness seemed a greater risk than poisoning part of the community. So after an interview I secured the pharmaceutical post and embarked on what proved an extremely interesting, busy and varied apprenticeship.

At the start my experience in pharmacy, or more strictly in chemistry, had been confined to the "stinks lab" at school. My first experiment, however, would for many a student have effectively removed any incentive to pursue the subject. I was dared to remove the stopper from the hydrogen sulphide bottle for a full minute whilst the master was out of the room. When he came back into the malodorous atmosphere, it was immediately evident to everyone that his sense of smell was by no means blunted.

Yet now I was set to work in a pharmacy, and what was more, was to be paid for doing so. True, the amount was only 5s. per week, that is £13 per year, and it was a long time before I could make up my mind whether that sum was salary, pocket money or just a handsome tip. Whatever it was it did not go far, though I was in some measure consoled by the promise of 7s. 6d. per week during the second year and, if body and soul should hang together for a further period, with 12s. 6d. per week in the third. Beyond that three-year plan one's thoughts did not reach out.

The pharmacy, situated in a northern city, was a busy one, probably one of the largest and most varied in the North of England. It had a separate and thriving photographic department on the first floor, and a photographic, developing, printing and enlargement service, with the processing done on the premises. Everything veterinary, horticultural and agricultural was sold, and a large range of household products were stocked.

Bewilderment

To be let loose amongst the pharmacy's great collection of "ethicals," galenicals, Dangerous Drugs, animal remedies, photographic goods, soaps, toiletries, perfumes, "patent" medicines, sundries and surgical goods, was a truly bewildering experience. Sheep dips, horse balls, blisters, pessaries, bougies, suppositories, pills, tablets and all manner of ointments were there in quantity. Sweet oil, colza oil, rape oil, turpentine, methylated spirit, linseed, venetian red, yellow ochre, Paris green, etc., were to be had by the pint, pound or gallon, the barrel or hundredweight.

The shop served the needs not only of the city, but of a wide rural area, and catered also for the requirements of a large number of medical men. The principal market day—Saturday—was always exceptionally busy, with the shop continuously crowded. It was a poor Saturday if we did not dispense 100 private and 100 to 120 National Health Insurance prescriptions. In the dispensary we were kept working from 9 o'clock in the morning until 9 at night.

Though I cannot remember the first items I was called upon to supply when serving behind the counter, I recollect well the occasional feeling of embarrassment at not being able to understand what the customer wanted, or even, in some instances, what he was talking about. It was one thing, too, to interpret the customer's request, quite another to know where to turn in order to get the article, or to know its price, then to have to ring up the amount correctly on the huge six-till cash register and give the exact change.

The "boss" was a character known to all and sundry for miles around, and much sought after. Twice lord mayor of the city, he was also "father" of the city council and chairman of numerous committees. To each young apprentice he was a formidable figure. He would brook no slackness nor tolerate time wasting, and we alternately loved and respected him for his blustering forthright qualities or reviled him when he appeared unjust or indifferent to our reasonings.

Nutritional Interlude

Those were not the days of canteens and cafeterias. In the morning the boss would sally out to his favourite café nominally for coffee, but in reality rather to meet other business people of the City—his "cronies" as we called them disrespectfully. So far as the staff were concerned 10 o'clocks or "elevenses," or even the expressed desire to have a morning cup of tea, were a sign of weakness not to be pandered to. However, no sooner had the boss's silvery head disappeared into the street in a tornado-like departure than one of the staff would dart to the door, to give the signal that he was really off in earnest. When that was certain the apprentices fell to. Under one of the benches in the dispensary we had a *câche* comprising a varied assortment of the good things of life that were to be found in the pharmacy. Needless to say they were kept well out of sight. There was a fantastic collection with which to refresh ourselves, and to replenish our wasted tissues, a degeneration brought about, we argued, solely by over-zealous application to business. Included in the "buttery" were Oxo, Bovril, Ovaltine, Horlicks, soft drinks, rusks, syphons of soda water, malt and oil, blackcurrant pastilles, etc. My favourite drink in the winter months was Glax-Ovo, good and strong. Pretty well half a tin was emptied into a tumbler and mixed by the addition of boiling water. The spoon had practically to stand upright before the mixture was considered food for the Gods. That, to-

gether with a dozen or more rusks, kept one going until lunchtime. As time went on I developed an uneasy suspicion that my spots were due to that over-rich diet, and small wonder! Regretfully, therefore, I switched to alternative refreshment.

My apprenticeship was not far advanced before I was allowed to commence work in the dispensary, first entering prescriptions in the prescription book, or writing labels, or doing from time to time that extra bit of clerical work which everybody dodged if possible (and which I also learned to detest): compiling at the back of the book an index of prescription numbers, dates and names of patients.

How was one ever to get to know what was what? Would one ever be upsides with all those names and synonyms? Quite early on I remember being told that acetylsalicylic acid was aspirin, and determining to memorise the fact. Even so I realised that I was not far along the road. What was the dose? What, indeed, were a grain . . . a scruple . . . a drachm? Even an empty medicine bottle could feel like a bomb when one had to conjure the correct quantity of an ingredient into it.

A worn and well used "Art of Dispensing" among the books on the dispensary shelves was in constant call. The instruction contained within its pages proved invaluable, and helped considerably to shape up my ideas on dispensing. I learned to regard with casual indifference those bland, urbane substances ol. olivae, ol. amygdalae, syrupus tolu, etc., but to pay enormous respect to those darkly potent preparations, tinct. opii, liq. strych., liq. hydrarg. perchlor. and tinct. digitalis, to mention only a few. I was, however, once caught out by liq. hydrog. perox. There was a need for some peroxide at home. Not being greedy by nature, but always preferring good measure, I put too much into the bottle. In the small hours of the morning there was a colossal bang. Ah! I thought, the peroxide on the shelf in my bedroom, and turned over to go to sleep again. Not so the rest of the family. They came rushing in, wetting their feet in the process, and for many a long day I was not allowed to forget the episode.

Cows in the Pharmacy

One of the branch shops of my apprentice-master was in a market town some miles away. Early in my apprenticeship it was arranged that I should travel there once a week to assist the manager and his apprentice on their market day. That journey I made regularly until I left for college—at first by train, later by bus. Those who fall for the fascination of a busy market day will, I am sure, excuse my truancy, for I used to nip off the train or bus and make my way to the cattle market, there to spend some time looking about, oblivious to pharmacy and my duties. Before the rush of customers began—it lasted from about 11 o'clock until four in the afternoon—the front shop would be fairly quiet, the staff being occupied mainly with duties in one of the back shops. In those days, animals had to walk to market—except, of course, for the lordly bull, which was carried in a horse-drawn bull cart: sheep and cattle had not yet learned to ride about on pneumatic tyres. It was no uncommon thing, therefore, for the relative peace and quiet of the shop to be broken by the plaintive baa-ing of sheep or the deeper and more sonorous moo of a cow. One might rush into the front shop to find it filled with sheep. They were relatively easy to get out, but one or two cows were quite another matter. Only a cow in a pharmacy, surely, can be worse than the proverbial bull in a china shop. Approaching the animal quietly, one utters soothing sounds, hoping that it will calmly back out and not turn about precipitously or swish its tail, for a single swish can sweep most of the stock from a counter. A sigh of relief goes up if nothing more is left behind than a few hoofmarks.

On one occasion I persuaded the manager of the branch, for whom I had a great respect, to loan me for a week his new B.S.A. bicycle. The machine was the last word in cycles, and off I went along a beautifully metalled main road, to be overtaken by a six-wheeler lorry, a rarity in those days. I caught hold of the tail-board and away we went at 40–50 m.p.h. As we rounded a bend I was compelled to let go, and shooting across the road landed in a thorn hedge. Nothing daunted, I continued the journey under my own steam, then went back to the city shop, only skidding off the bicycle twice on the way there. The second time I severely sprained a thumb, but carried on and even managed to do a spell of dispensing before the shop closed at 8 o'clock. There was never a dull moment in shop life in those days!

One market day at the branch shop a farmer asked for a small quantity of strychnine. After he had duly signed for it I weighed it out for him and then left to catch my bus. A week later, on returning to the branch pharmacy, I was met by an indignant manager and his equally inflamed assistant. They were aggrieved that I had covered with a fine coating of strychnine powder every label in the label drawer under the dispensing scales. I might have poisoned them! They considered themselves lucky to be alive! Both, they said, had gargled continuously for a week. However, they both looked so indecently fit that I decided, if there was any truth in what they said, that strychnine must be a really good tonic, and told them so.

Wanted by the Police

One morning before I left to catch my bus to take me to the branch a man came into the shop and asked for 1 oz. of chloroform, with which I duly served him. On returning to the pharmacy after tea I was told by an excited staff that the police were looking for me. For a split second I felt like a hunted criminal. It transpired that, after leaving the shop, the unfortunate man had gone to a station waiting room, there to swallow the chloroform together with an ounce of hydrocyanic acid. The man was, I believe, an assistant in a pharmacy somewhere in the Midlands. Though a great shock to me, the whole matter passed off quietly, for I was not even called upon to attend the inquest.

Our city pharmacy was separated from the adjoining premises by a lane ending in a *cul-de-sac*. On each side of the lane were warehouses stocked with bulk commodities, including casks of sheep dip, disinfectant fluids, carboys of distilled water, agricultural oils, etc. Linseed and linseed meal were stored in suitably lined wooden casks, and when the idea occurred, or the time was thought to be appropriate, one or more of us would dash up the lane, whip the loosely fitting circular wooden lid from off the linseed meal cask and there, almost certainly, would be several mice having the time of their lives. A lively scuffle and flurry ensued. Sometimes we caught one of the wee beasties, but mostly, after a fine display of acrobatic ability, they were too elusive for us.

One of the porter's multitudinous duties was to fill vinegar from casks into 3-gill amber bottles. A country customer returned one of them to us one day. She spoke more in sorrow than in anger, and that was surprising, for, at the bottom of the nearly empty bottle, was a small mouse, thoroughly pickled, and she had used nearly all the vinegar before making the discovery. Hastily we gave her another bottle of vinegar free of charge (and free of mouse). Such affairs were not brought into the courts so much in those days.

On one occasion the staff of a shop adjacent to the pharmacy caught a large black rat in their cellar, and brought it into the lane in a wire cage. The schoolboy son of another chemist in the city, who used to call every day to collect supplies for his father's shop, dashed off for his Lakeland terrier. Everyone gathered round. Dispensing was suspended. At the sight of the terrier the rat became frenzied and the terrier went wild with excitement. As the porter bent down to open the door of the cage I was behind him. His nether regions were admirably presented and the impulse to give him one almighty kick for being so unfair to the rat was almost uncontrollable. I held myself in, how-

ever, and that catastrophe was averted. For the rat, things were different. When the cage door was opened out bolted the rat, but the dog was on it in an instant. Sadly I returned to the dispensary.

Under the front shop we had good dry cellars, in which were a large number of winchesters of galenicals, mainly tinctures. The back cellar housed stocks of oils, liniments, decoctions and emulsions, and between the two cellars was a smaller one with a skull and cross-bones painted on the door, and in which were kept all the chemical "oddities." Here were to be found, among other things, phosphorus, carbon bisulphide, alcoholic ammonia, hydrofluoric acid in gutta-percha bottles, and even a leech jar containing several leeches.

The centre of the floor of the back cellar was stacked with boxes, each containing six or twelve syphons of soda water, potass water, or lemonade. Hardly a day passed without some delivery of goods being unpacked, necessitating the removal of winchesters to the cellars. On occasion it was necessary to handle about eighty winchesters at a time, and to relieve the tedium we sometimes indulged in syphon fights. Heads popped up and down behind fortresses of syphon boxes and streams of gaseous fluid were discharged at the targets. Sometimes a bull's-eye was scored, but more often the target was missed altogether. A truce was generally called when someone was thoroughly soaked or when our superiors were thought to be approaching, but accidents were bound to happen from time to time. On one warm, sultry summer afternoon I was engaged in removing stock to the cellars, wearing an immaculate pair of grey flannels (my pride and joy) and a knee-length overall. There were three winchesters of tinct. scillæ to take below. With one in each hand, held partially behind me, I descended the stone steps to the cellar. Alas! Clink went one of the winchesters against the stairs wall, and I was left holding the neck while the tincture saturated the back of my trouser legs and filled my shoes. Within an hour my trousers had dried as stiff as a board and looked and felt most odd; they never came back to normal.

The shelf holding emulsions and liniments tended in the nature of things to become slippery. One afternoon, as I was putting away a dozen winchesters of lin. album, one of them began to slide off the shelf, and before I could make a move it had knocked against several more. Altogether five winchesters of the liniment crashed to the stone floor. The mess was not only on the floor, for I was smeared with the stuff. Hastily I told the porter to bring a large quantity of sawdust in a tea chest, and tidy up the place. That he did most effectively, but for days the shop above reeked of liniment, mystifying the boss, who went around sniffing like a bloodhound, much to my mental disturbance, though he never found out the explanation.

Stock Replenishment

We had at the pharmacy a demand for soiled soap, which sold at 1s. per lb. We apprentices were never at a loss in replenishing the stocks, for we had no compunction in "dribbling" a few tablets of soap about the floor or down the cellar stairs, to "convert" it. Even expensive soaps, unbeknown to the boss, sometimes found their way to the soiled soap stock, and many a gratified customer must have smelled the sweeter because of our nefarious conduct.

In the dispensary one day, after a mad rush from morning till night, the last mixture had been made and the decks were being swabbed. I turned about. Heavens! Something on the scale pan! Ginger! "Have you left the ginger out of the last mixture?" I inquired. That unhappily proved to be the case, as we found on checking. We had visions of a disgruntled dyspeptic patient returning after the week-end to complain that his mixture had no "bite." The situation, of course, had to be remedied: we also had to consider his dyspepsia. A further quantity of mixture was dispensed and I gallantly called upon the dyspeptic, who, of course, lived in almost the last house in the furthest suburb. He accepted my invented story of his having been handed a namesake's bottle by mistake, and cheerfully, in the darkness, I poured his gingerless mixture down the nearest drain.

Every so often we had to tidy up the drug room, and that was a major operation, a full day's work. Boxes, bags and bottles of drugs that had been left open, owing to carelessness or because of urgency, had to be closed and tied. Powders that had spilled over had to be swept up. Usually, the atmosphere was choking before the task was finished, and if we came across the bag of pulv. quillaia we would take a pinch of it down to the shop, surreptitiously sprinkling it about the counter and near the cash till, and holding our breath as we did so. Oh what an outbreak of sneezing! Staff and customers alike were the victims.

One afternoon a lady I had served a week earlier with a block of Ovaltine chocolate returned with it. On taking off the wrapper she had been astonished to find a block of wood, for I had failed to notice the word "dummy" printed on the back.

Strictly Entre Nous

Into the pharmacy one day walked a man whose like I had never seen before. Rough, tough, grizzled, with a stubble over his face, he was, as we used to say, "right off the turnip tops," and might have been the last of the ancient Britons. He looked around furtively, for the shop was full of people, then came up to me at the counter and, leaning over, appeared to ask my confidential advice about something. His speech was so broad, however, and in such a strange dialect, that I was unable to make head or tail of what he said. Not wishing to offend him, I nodded my head sagely, uttering the magic words "Yes, yes," at appropriate intervals, whereupon he leaned over more closely and became more confidential still. The thing clearly could not go on, for I hadn't the faintest idea what he was getting at. Finally he twigged that I had failed to understand what he was saying, and a further embarrassing struggle of wits took place, from which I finally gathered that he had just heard about Beechams pills and had been recommended to take one each night. Would they be all right for him? "Oh yes," I said, "quite all right," thinking at the same time that perhaps a small horse-ball might benefit him more. He remained uncertain, and suddenly his confidential manner deserted him. He roared "A'm costive I tell you, A'm verra costive, Dost'a think two'll be too savage for ma?" Everyone, staff and customers, were politely convulsed, but my own concern was rather over the old man's mental than over his physical discomfiture.

One Saturday evening, as closing time was approaching, and the shop was still thronged, a man walked in with a new accumulator, which he had just bought from a nearby cycle shop. In the hurry and rush our youngest apprentice, who had asked what acid to use, misinterpreted the directive given. As I passed him down the long back shop, I noticed consternation and bewilderment on his face. And no wonder, for he was filling the accumulator with sulphuric acid conc.! Choking fumes were filling the air, and from the volcanic interior of the accumulator rumblings and bubblings were beginning to be heard. I had to think quickly. Even so there was an ominous crack before I could pick up the accumulator. The thing more or less held together just long enough for me to transfer it to a sink. Fortunately the boss in the front shop was blissfully unaware of what was happening behind, and the newest of our apprentices stood by panic stricken or rather worse. I transferred the wreck of the short-lived accumulator to the rubbish bin outside, and took it upon myself to inform the owner of its demise (though not what actually happened: he was told the accumulator had inadvertently fallen to the floor and cracked). He began to look pugnacious. So quickly I paid him 7s. 6d. from the till and told him to go and buy another accumulator. He returned with one which this time, fortunately, was correctly filled. In my cash till I put a note "returned bottles, 7s. 6d.," and later on, when

the boss was "cashing the till" he said in a rather questioning tone, "Returned bottles, 7s. 6d.—that must have been a large number of bottles?" I murmured "Yes, actually quite a lot," and the day was saved.

In the making of pills there was real artistry to be attained by the budding apprentice. One mixed the mass, rolled, then cut it, but somehow or other the end pill, numbering off from left to right, always seemed to be the weakly duckling, at times a veritable Tom Thumb amongst his brothers. To apprentices who even now may be embarking on pharmacy I would say "Beware! If you should ever be called upon to make a batch of pills, see that they are all of equal stature." There is nothing so undignified as having to face a lamenting patient's complaint that his pills are of all shapes and sizes. Laymen have always delighted in their little joke about the missing pill being found on the sole of the shoe of the dispenser. One may as well admit that it could always be a possibility. I had almost finished my batch of pills: two dozen of the best. I know, for I had just counted them, but someone came to ask a question and I was then called to deal with another urgent matter. Back in the dispensary I once again counted the pills. Twenty-one, twenty-two, twenty-three, but no twenty-fourth. I looked everywhere for the missing pill and finally it turned up on my shoe, just recognisable, clinging tenaciously to the sole but as flat as a fluke. I reckoned that I had been twice round the shop since leaving the dispensary, which for a pill was a mighty long way to go. I scraped it off the shoe and reshaped it, and a moral tussle ensued. Should I or shouldn't I? Finally I made a fresh batch.

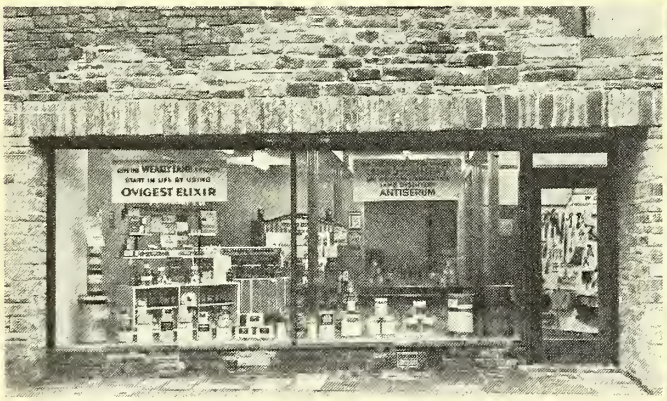
I look back upon those apprenticeship days with a certain nostalgia. They were busy, exciting, challenging and full of variety. Perhaps the "art" is rather more prosaic nowadays. And what of the boss? Brusque, bustling, forthright, driving, just and unjust according to his moods or our opinions, a provincial tycoon in his day, we shall not see his like again, for the present day does not call for his type. He has long since passed on, and without a doubt is organising the pharmacy department of Valhalla. Possibly he looks down with a certain pity as he sees half the nation today taking pills to help it to sleep, the other half other pills to help it stay awake.

A VETERINARY PHARMACY AT PENRITH

"Leader in a national trend"

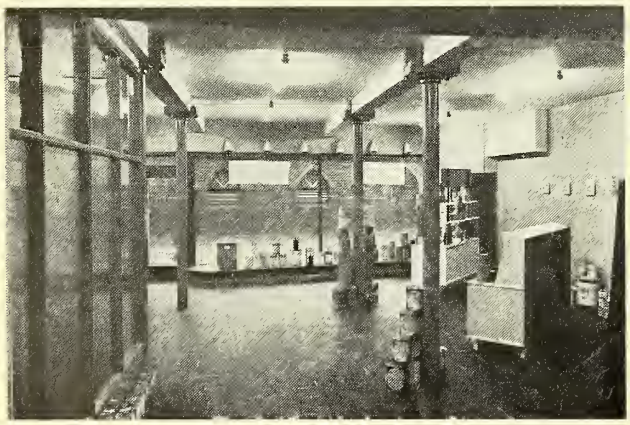
THE fourth in a series of veterinary pharmacy departments operated by West Cumberland Farmers Trading Co., Ltd., was opened at Penrith recently. The pharmacy is claimed "the most modern veterinary chemist shop in the country" and "the leader in a national trend to establish specialist veterinary chemists' shops as distinct from the usual family type of business."

The Society was founded in 1911 by a group of Cumberland farmers mainly from the district around Whitehaven. It was first called the West Cumberland Agricultural Co-operative Society, Ltd., and took as its headquarters accommodation in a four-story building in a back street in Whitehaven. In the first year sales amounted to £6,000, there were 47 members and the share capital was just over £500. In 1919 the Society appointed as general manager and secretary Mr. John Wade, who managed it for the next thirteen years until his death in 1932. John Wade raised the membership to over 1,300. The Society's share capital rose to £39,000, its yearly sales to £290,000. As his successor, the directors appointed his son, Mr. John C. Wade, who has brought the Society to its present 16,000 members; £1¼ million share capital; yearly sales exceeding £11½ millions; reserves of nearly £350,000; and a similar amount distributed out of profits in a year. At the Society's head office at Whitehaven there are four administrative departments: a sales office, buying, accounting and cost accounting; and in other parts of the region there are warehouses, factories and depôts.



Above: The shop window and the dispensary.

Below: Two views of the interior.



TRADE REPORT

The prices given are those obtained by importers or manufacturers for bulk quantities or original packages. Various charges have to be added whereby values are in many instances augmented before wholesale dealers receive the goods into stock. Crude drugs and essential oils vary greatly in quality and higher prices are charged for selected qualities.

LONDON, JUNE 22: Whilst trading in PHARMACEUTICAL and FINE CHEMICALS was generally dull, demand for INDUSTRIAL CHEMICALS continued on a satisfactory level.

The weakness of ALOES at source was reflected in a further cut in shipment quotations. Other commodities in the CRUDE DRUGS market were unchanged on the week. Tinnevelly SENNA leaves and pods are reported to be arriving in moderate quantities at the collection centres in India. Export of leaves and pods from the port of Tuticorin during May were as follows:

	U.K.	U.S.	EUROPE
SENNA	Tons	Tons	Tons
LEAVES	6	31	9
PODS	3	4	16

About 10 tons of NUX VOMICA seeds were also consigned from that port to the United Kingdom during the month.

In ESSENTIAL OILS Chinese SPEARMINT is once again quoted down one penny per lb. CITRONELLA was lower by three-halfpence or twopence per lb. as to origin, and Madagascar CLOVE LEAF by threepence. On the other hand LEMONGRASS turned firmer at origin without affecting spot prices.

Pharmaceutical Chemicals

PHENACETIN.—B.P. one-ton lots, 6s. 3d. per lb.; 1-cwt., 6s. 6d.

POTASH SULPHURATED. — Lump, B.P.C., 2s. 6d. per lb. in 1-cwt. lots.

POTASSIUM ACETATE. — (Per lb.) 1-cwt. lots, 3s.; 5-cwt., 2s. 8d.; 10-cwt., 2s. 6d.

POTASSIUM BICARBONATE. — B.P. powder, 110s. per cwt. 1–4-cwt. lots and 105s. per cwt. for 5-cwt. and over.

POTASSIUM BROMATE. — In 5-cwt. lots, 5s. 3d. per lb.

POTASSIUM CHLORIDE. — In 1-cwt. lots B.P., 1s. 6d. per lb.

POTASSIUM HYDROXIDE.—B.P. sticks are from 6s. 8d. per lb. and pellets, 4s. 6d.; technical flake, 1s. 10d.

POTASSIUM 8-HYDROXYQUINOLINE SULPHATE. — 1-kilo is 47s. 1d. and 50 kilos, 44s. per kilo.

POTASSIUM NITRATE. — Pharmacopœial quality, 100s. per cwt. (crystal or powder) in 1-cwt. lots.

POTASSIUM PERMANGANATE. — B.P. in 1-cwt. lots, 1s. 11¼d. per lb. Technical 209s. per cwt. and £198 per ton.

POTASSIUM QUADROXALATE. — One-cwt., 3s. 6d. per lb.

POTASSIUM SULPHATE. — B.P. 1949, one-cwt lots, 1s. 2d. per lb.

POTASSIUM THIOCYANATE. — One-cwt., 5s 6d. per lb.

SODIUM ACETATE.—B.P.C., 28-lb., 2s. 4d. per lb.; 1-cwt., 2s., 5-cwt., 1s. 11d.

SODIUM BENZOATE.—One-ton lots, 2s. 7½d. per lb.; 1-cwt., 2s. 9½d.

SODIUM BROMATE. — One-cwt., 9s. 9d. per lb.

SODIUM CARBONATE. — B.P.C. exsiccated, 70s. per cwt.; 5-cwt., 65s. per cwt.

SODIUM CHLORIDE. — Recrystallised, 25s. per cwt.; B.P., 42s.

SODIUM METABISULPHITE. — Granular, 1-cwt. lots, 9d. per lb.

SODIUM PERBORATE. — (Per ton) £145 15s. in 1-cwt. kegs; £138 5s. in 1-cwt. bags for B.P.C. (minimum 10 per cent. available oxygen). PERBORATE MONOHYDRATE testing 15 per cent. available oxygen is £309 15s.; TETRAHYDRATE, from £131 15s. to £139 5s. per ton as to packing.

SODIUM PERCARBONATE. — (Per cwt.) 170s. 9d. (bags, 7s. 6d. lower) for minimum 12½ per cent. available oxygen.

SODIUM PHOSPHATE. — B.P.C. powder, 2s. 3d. per lb.

SODIUM SALICYLATE. — One-ton lots in bulk, 3s. 7d. per lb.; 5-cwt. 3s. 8d.; 1-cwt. 3s. 10d.

SODIUM SULPHATE.—B.P. from £12 10s. to £19 17s. 6d. per ton as to crystal and quantity, ex works.

Crude Drugs

ALOES. — Cape primes, spot, 200s. per cwt. quoted; shipment, 180s., c.i.f., nominal. Curaçao, 500s., spot.

BALSAMS.—Per lb.:—CANADA: Spot, 22s. for paper-filtered. COPAIBA: Para scarce on the spot, small lots at 7s. 9d., duty paid. PERU: Spot, 9s. 9d. in bond. TOLU (genuine as imported): small parcel on spot at 24s. per lb.; B.P., 13s. 9d.

BELLADONNA. — LEAVES (t.a. 0·6 per cent.), 2s. 9d. per lb. Dutch for shipment, 2s., c.i.f. ROOT cleared on the spot.

BENZOIN.—Sumatra block, spot £22 to £30 as to quality.

BUCHU. — Spot rounds, 3s. 6d. per lb., shipment, 3s. 1d., c.i.f.

CALABAR BEANS.—Spot, 1s. 8d. per lb.

CALAMUS.—Root, 1s. 2d. per lb., c.i.f.

CALUMBA.—Root, 100s. per cwt., spot; 87s. 6d., c.i.f.

CAMPHOR.—B.P. powder, 3s. 7½d. per lb. in bond.

CAPSICUMS.—Chinese 155s., duty paid.

CARDAMOMS. — Aleppy greens, spot, 15s. 3d. per lb.; prompt shipment, 14s. 6d., c.i.f. Seeds, shipment, 21s. 6d., c.i.f.

CASCARA.—Spot, 295s. per cwt.; prompt shipment, 275s., c.i.f.; 1960 peel, June–July, 237s. 6d., c.i.f.

GINGER. — African, spot, 165s. June, 155s., c.i.f. Jamaican No. 3, spot, 205s.; shipment, 195s., c.i.f. Cochin, shipment, new crop, 160s., c.i.f.

GUM ACACIA. — Kordofan cleaned sorts, 172s. 6d. per cwt., spot; June-July shipment, 166s., c.i.f.

HENNA.—Indian, spot, 90s. per cwt.

HONEY.—Australian light amber, 92s. 6d. to 97s. 6d. and medium amber, 87s. 6d. to 92s. 6d. Argentine, 102s. 6d. to 105s.; Jamaican, 115s. to 120s.; Canadian clover, 145s. to 150s., all per cwt. on the spot ex warehouse.

IPECACUANHA. — Matto Grosso 54s. 6d. per lb., c.i.f. Colombian, 53s. 6d., c.i.f. Costa Rican, 73s., c.i.f. Matto Grosso spot, 55s.

JUNIPER BERRIES.—Italian 90s. per cwt., spot.

KARAYA.—No. 1 gum, spot 325s. per cwt. nominal; No. 2, 225s.

KOLA NUTS. — Jamaican for shipment, 7d. per lb., c.i.f. African, 5½d. spot and 4d., c.i.f.

LANOLIN. — ANHYDROUS, B.P. is from 170s. to 175s. per cwt. in 1-ton lots and HYDROUS, B.P., 150s., free drums, delivered.

LOBELIA HERB. — American, 4s. 9d. per lb., spot.

SEEDS (Per cwt.). ANISE. — Bulgarian, 115s.; Spanish, 165s., duty paid. CARAWAY. —Dutch, 175s., duty paid. CELERY.—Indian, 145s., spot; shipment, 120s., c.i.f. CORIANDER. — Rumanian nominal, 65s., Moroccan, 55s., both duty paid. Moroccan, July–August shipment, 46s., c.i.f. CUMIN.—Indian, 215s.; Iranian, 235s., duty paid; shipment, Indian, 180s., c.i.f. DILL. —Indian, 95s., spot; shipment, 80s., c.i.f. FENNEL.—Chinese, 90s., duty paid, Indian, 120s. FENUGREEK.—Moroccan, 53s., duty paid; new-crop for shipment, 34s., c.i.f. MUSTARD.—English, 94s. to 100s. according to quality.

WAXES. — (Per cwt.). BEES'.—Dar-es-Salaam, spot, 485s.; shipment, 478s., c.i.f. Abyssinian, spot 410s. in bond; shipment, 370s., c.i.f. Benguela, shipment, 380s., c.i.f. Sudanese, spot, 440s.; shipment, 380s., c.i.f. CANDELILLA, spot, 470s. CARNAUBA, fatty grey, spot, 570s.; shipment, 560s., c.i.f.; prime yellow, spot, 825s., shipment, 765s., c.i.f.

Essential and Expressed Oils

ALMOND. — Moroccan, 6s. per lb., duty paid.

AMBER.—Rectified on the spot, 1s. 6d. per lb.

ANISE.—Chinese, 7s. 2d. per lb., spot; shipment, 7s. 2d., c.i.f.

ARACHIS.—Spot, 2–5-ton lots naked ex mill, £142 per ton.

BAY.—West Indian, 12s. 6d. per lb. on the spot.

BERGAMOT.—Spot, from 72s. 6d. per lb.

BOIS DE ROSE.—Brazilian, 15s. 3d. per lb. on the spot and 14s. 9d., c.i.f.

CARDAMOM. — From 330s. per lb. for English-distilled and 260s. for imported.

CASSIA. — Spot, 15s. 6d. per lb.; shipment, 15s., c.i.f.

CASTOR.—Home-produced B.P. oil, spot, £155 per ton naked ex mill (2-ton lots).

CEDARWOOD.—American rectified, 6s. 6d. per lb. on the spot.

CELERY SEED. — Dutch oil, 90s. per lb. and Chinese, 65s.

CHENOPODIUM.—Spot value, 36s. per lb. for original containers.

CINNAMON. — From quillings, best English-distilled is 50s. per oz.; other B.P. oils from 165s. per lb. Ceylon leaf, spot, 9s. 6d. per lb.; rectified, 10s. 6d. per lb.; Seychelles, 10s. 6d., spot.

CITRONELLA. — Ceylon, spot, 7s.; shipment, 6s. 7d. per lb., c.i.f. Formosan, spot, 6s., in bond; shipment, 5s. 9d., c.i.f.

CLOVE.—Madagascar leaf, spot, 8s. per lb., duty paid; shipment, 6s. 9d., c.i.f. Rectified 87–88 per cent., 12s. Distilled bud-oil, English, B.P., 30s. to 31s.

LEMON.—B.P. grades from 16s. per lb., spot; Sicilian, 25s. 6d. Terpeneless, 500s. per lb.

LEMONGRASS. — Spot, 11s. 9d. per lb., and shipment, June–July, 11s. 1½d., July–August, 11s.

ROSEMARY.—Spanish is 7s. 6d. per lb. on the spot for best quality.

RUE.—Spanish is 25s. per lb. spot.

SAGE.—Spanish, 8s. per lb.

SANDALWOOD.—Mysore and East Indian, 125s. to 130s. per lb.

SASSAFRAS.—Brazilian is from 3s. 6d. per lb., duty paid.

SPEARMINT.—American oil from 67s. 6d. to 70s. per lb. Chinese, 45s., c.i.f.

TANGERINE.—From 24s. to 26s. per lb., spot.

CUMULATIVE LIST OF AMENDMENTS TO THE

C. & D. Quarterly Price List, *June 1*

A=Advanced; R=Reduced. ENTRIES NEW THIS WEEK ARE MARKED THUS ●

	2-Minute Magic (385 DG)		57	0	28	6	**9**	**6**		
	Achromycin (746 Lederle)									
	capsules 50 mgm	25	10	10ea		..	**16**	**3**	TS	
		100	40	6ea		..	**60**	**9**	TS	
	250 mgm	16	29	0ea		..	**43**	**6**	TS	
		100	174	2ea		..	**261**	**3**	TS	
		1000	1682	4ea		..	**2523**	**6**	TS	
	for ear solution									
	vial powder .. 50 mgm vial diluent .. 10 cc		6	10ea		..	**10**	**3**	TS	
	intramuscular vial									
	100 mgm		5	2ea		..	**7**	**9**	TS	
	intravenous vial 100 mgm		4	8ea		..	**7**	**0**	TS	
	250 mgm		9	8ea		..	**14**	**6**	TS	
	500 mgm		17	6ea		..	**26**	**3**	TS	
	ointment 3% 30 mgm	½ oz	4	6ea		..	**6**	**9**	TS	
		1 oz	8	2ea		..	**12**	**3**	TS	
	ointment ophthalmic 1%									
	10 mgm 6 × ½ oz tubes		6	10ea		..	**10**	**3**	TS	
	ophthalmic powder									
	sterilised vial ..		5	6ea		..	**8**	**3**	TS	
	for oral suspension									
	1·5 gm	1 oz	10	10ea		..	**16**	**3**	TS	
	ophthalmic oil suspension 1% 10 gm/cc									
	dropper	6 cc	1	10ea		..	**2**	**9**	TS	
	pediatric drops	10 cc	7	4ea		..	**11**	**0**	TS	
	soluble tablets ..	100	40	6ea		..	**60**	**9**	TS	
	syrup	2 oz	10	10ea		..	**16**	**3**	TS	
		16 oz	78	0ea		..	**117**	**0**	TS	
	tablets 50 mgm ..	25	10	10ea		..	**16**	**3**	TS	
		100	40	6ea		..	**60**	**9**	TS	
	250 mgm ..	16	29	0ea		..	**43**	**6**	TS	
		100	174	2ea		..	**261**	**3**	TS	
		1000	1682	4ea		..	**2523**	**6**	TS	
	troches 15 mgm ..	25	4	2ea		..	**6**	**3**	TS	
	Achromycin, V (746 Lederle)									
	capsules 250 mgm ..	16	29	0ea		..	**43**	**6**	TS	
		100	174	2ea		..	**261**	**3**	TS	
		1000	1682	4ea		..	**2523**	**6**	TS	
	50 mgm ..	25	10	10ea		..	**16**	**3**	TS	
		100	40	6ea		..	**60**	**9**	TS	
	pediatric drops	10 cc	7	4ea		..	**11**	**0**	TS	
	syrup	2 oz	10	10ea		..	**16**	**3**	TS	
		16 oz	78	0ea		..	**117**	**0**	TS	
	Alfonal (29 Alfonal)									
	corn oil ..	½ gall	12	0ea		..	**15**	**0**		
	sunflower seed oil	½ gall	18	9ea		..	**25**	**0**		
●	**Ambramycin** (70 Aspro)									
	capsules 250 mgm ..	16	29	0ea		..			TS	
		60	104	6ea		..			TS	
		250	423	4ea		..			TS	
	oral suspension 2·5%	60 mils	10	10ea		..			TS	
	Amphedrex (195 Brook Parker)									
	tablets	25	9	0	..	..	**1**	**2**	p1s4B	
		1000	9	0ea		..	..	..	p1s4B	
	Andre Philippe (48 AP)									
	after shave lotion 4 oz	102	15	0	7	6	**2**	**6**		
	after shave talc puffer	103	15	0	7	6	**2**	**6**		
	Ann French (655 ICC)									
	golden tan		18	0	..	9 0	**2**	**9**		
	cleansing cream ..		15	9		7 11	**2**	**6**		
	Anthical (814 M&B)									
	cream	1 oz	20	0		5 0	**2**	**11**		
	Apiella (450 Farthing)									
	clear skin lotion ..	6 oz	57	0	27	10	**9**	**6**		
	vitaliser plus	2 oz	252	0	122	10	**42**	**0**		
	Aprinox (147 Boots)									
	tablets 2·5 mgm ..	100	11	6ea		..	**15**	**4**		
		500	52	0ea		..	**69**	**4**		
	5 mgm ..	100	19	3ea		..	**25**	**8**		
		500	92	9ea		..	**123**	**8**		
	Artane (746 Lederle)									
	elixir	16 oz	9	10ea		..	**14**	**9**		
	tablets 2 mgm ..	100	7	0ea		..	**10**	**6**		
		1000	58	6ea		..	**87**	**9**		
	5 mgm ..	100	14	0ea		..	**21**	**0**		
		1000	116	2ea		..	**174**	**3**		
	Ayrotabs (78 AS&Co) ..	50	40	0	10	0	**6**	**4**		
	Ayrton (78 AS&Co) tablets									
	iron, vitamin and yeast (Ivy)		16	0	..	..	**2**	**0**		
	face cloths 'Smart Set'	301	18	0	..	..	**2**	**6**		
	hot water bottle The Argosy		52	0	..	..	**6**	**6**		
Delete	scissors toe nail Edgware		..	..		..	..			
Delete		401	..	..		..	..			
Delete	tower display		..	..		..	..			
	Barnet (617 Holloway)									
	ladies brush sets Duette	A11	61	4	15	4	**8**	**11**		
		A13	86	4	25	2	**12**	**11**		
		A14	109	0	27	3	**15**	**11**		
		A15	128	0	35	0	**18**	**11**		
Delete	A16, A17		..	..		..	..			
	Annette	A29	61	4	15	4	**8**	**11**		
		A30	102	0	25	6	**14**	**11**		
	Juliette	A31	64	8	16	2	**9**	**6**		
		A32	109	0	27	3	**15**	**11**		
	Colette	A33	40	6	10	1½	**5**	**11**		
	babies brush sets ..	A27	26	10	6	8½	**3**	**11**		
		A28	33	8	8	5	**4**	**11**		
	gents brush sets ..	A35	32	8	8	2	**4**	**11**		
	Bartex (477 AF&B)									
	superlens clipovers ..		..		..	..	**7**	**6**		
	superlens sunglasses ..		..		..	..	**7**	**11**		
							12	**9**		
							15	**11**		
	Becosed (901 Norton)									
	elixir	16 oz	96	0	..	..	..		†s1s4A	
		80 oz	348	0	..	..	..		†s1s4A	
	Bedeman (102 CB)									
	lemon cream shampoo		21	9		5 5½	**1**	**0**		
			3 doz			3 doz				
R	**Biotta** (612 Hobson)									
	vegetable juice									
	carrot, beetroot, tomato		85	6	..	..	**9**	**6**		
	celery		89	3	..	..	**9**	**11**		
	Bisodol (655 ICC) powder		30	3		7 7	**4**	**0**		
	tablets	30	15	2		3 10	**2**	**0**		
		100	36	0		9 0	**4**	**9**		
	Broxil (1393 BRL)									
	syrup	60 mils	222	0	..	..	**18**	**6**	TS	
	tablets 125 mgm ..	24	192	0	..	..	**24**	**0**	TS	
	250 mgm ..	24	352	0	..	..	**44**	**0**	TS	
Delete	125 mgm ..	12	..		..	..	..			
Delete	250 mgm ..	12	..		..	..	..			
	Buto (128 Biometica)									
	hair remover		13	6		6 9	**2**	**3**		
	Calcipen-V (147 Boots)									
	125 mgm ..	60 mils	106	0	..	..	**13**	**3**	TS	
	Cambison (614 Hoechst) ointment (distributors 621 Horlicks)									
	0·25%	5 gm	40	0		9 9	**5**	**10**	TS	
		20 gm	128	0		31 2	**18**	**7**	TS	
	0·5%	5 gm	64	0		15 7	**9**	**3½**	TS	
		20 gm	204	0		49 9	**29**	**8**	TS	
	Camyna (969 Pfizer)									
	tincture ..	20 mils	4	3ea	1	0¾ea	**7**	**6**		
	lotion	20 mils	4	0ea	1	0ea	**7**	**0**		
	Caphedrodine (211 Butler)									
		16 oz	174	0	..	..	**21**	**9**		
		80 oz	840	0	..	..	**105**	**0**		
	Carboxymethylcellulose (746 Lederle)									
	jelly 4·5% ..	15 cc	2	4ea		..	**3**	**6**		
	Carters (1003 PP) little liver pills		9	7		2 5		**4**		
			4 doz			4 doz				
	Cascade (814 M&B)									
	photographic wetting agent									
		30 mils	36	0	..	..	**4**	**6**		
		500 mils	120	0	..	..	**15**	**0**		
	Censedal (814 M&B)									
	tablets 200 mgm ..	500	560	0	..	..	**70**	**0**	†s1s4A	
	Chanel (247 Chanel) toilet soap,		20	8		5 2	**3**	**0**		
		bath	37	10		9 6	**5**	**6**		
	Chase Biocel (327 WC)									
	remove cleansing cream		49	6	24	9	**8**	**3**		
	skin beauty cream ..		49	6	24	9	**8**	**3**		
	moisturising cream ..		49	6	24	9	**8**	**3**		
	hand cream		31	6	15	9	**5**	**3**		
	Chesties (1215 Teasdale)	5 lb	2	1lb		7½lb	**1**	**0qtr**		
	Choice (1388 Durazone)									
	garden spray aerosol ..	6 oz	29	9	..	..	**2**	**11**		
	Christmas in July (150 Bourjois)									
	skin perfume		48	8	24	4	**8**	**6**		
	perfume purse flacon ..		54	4	27	2	**9**	**6**		
	presentation		111	6	55	9	**19**	**6**		
	"Spray Mist"		100	0	50	0	**17**	**6**		
	cologne stick		31	6	15	9	**5**	**6**		
	toilet soap	3	39	6	9	10½	**5**	**9**		
	bath cubes	6	26	0	13	0	**4**	**6**		
	talcum		31	6	15	9	**5**	**6**		
	Cologne		60	0	30	0	**10**	**6**		
	Clearasil (1277 Vick) ..		30	10		7 8½	**4**	**6**		
	Crescent (347 Dalmas)									
	corn rings thin ..	12	13	8	..	..	**1**	**7**		
	thick ..	12	16	0	..	..	**1**	**10½**		
	bunion rings thin ..	6	13	8	..	..	**1**	**7**		
	thick ..	6	16	0	..	..	**1**	**10½**		
	Cussons (388 Cussons)									
	wild lavender skin									
	perfume	5747	26	2	12	9	**4**	**7**		
	soap	2158	9	6	2	3¾	**1**	**3**		
	sparkling wild lavender									
	bath cubes ..	5521	3	1	1	6		**6**		
	Cycloserine with INH (413 Lilly)									
	Pulvules	40	61	8ea		..	**92**	**6**	TS	
		100	146	8ea		..	**220**	**0**	TS	
		500	716	8ea		..	**1075**	**0**	TS	
●	**Dainty** (905 Nufoam)									
	synthetic sponge ..		..		..	..	**2**	**6**		
	Dalmas (347 Dalmas) first aid dressings									
	wallets	12	7	0	..	..		**10**		
	waterproof		8	6	..	..	**1**	**0**		
			21	6	..	..	**2**	**6**		
	elastic finger dressing		3	6	..	..		**5**		
	elastic adhesive first aid									
	dressing assorted	gross	6	9ea		..	**9**	**6**		
	1½ × ¾ in	gross	5	0ea		..	**7**	**0**		
	2½ × ¾ in	gross	7	6ea		..	**10**	**6**		
	3 × ¾ in	gross	9	1ea		..	**12**	**9**		
	1½ × 2 in	gross	15	0ea		..	**21**	**0**		
	2 × 3 in	gross	24	0ea		..	**33**	**8**		

	2½ × 3½ in	gross	32	0ea	..	..	45	0	
	3½ × 4½ in	gross	58	0ea	..	..	81	3	
patchettes ..	⅞ in	gross	7	0ea	..	..	9	10	
elastic orthopaedic									
strapping ..	2 in × 3 yd		40	8ea	..	..	4	9	
	2½ in × 3 yd		49	9ea	..	..	5	9	
	3 in × 3 yd		58	8ea	..	..	6	10	
	4 in × 3 yd		76	9ea	..	..	9	0	
vaccination dressings	N.H.S.		4	0 ..	..			6	
elastic N.H.S.		child	3	10 ..	..			5½	
		adult	6	6 ..	..			9	
waterproof		child	8	6 ..	..		1	0	
		adult	8	6 ..	..		1	0	
boil dressings No. 3 ..			6	0	2	0	1	1½	
elastic wound dressings									
	small		5	0 ..	..			7	
	medium		7	0 ..	..			10	
	large		9	0 ..	..		1	1	
	ex large		13	9 ..	..		1	8	
salicylic acid corn plasters									
	20% N.H.S.		3	2	1	0		7	
poppy-lastic corn straps			6	0	2	0	1	1½	
umbilical pads ..			13	0 ..	..		1	6	
eye shades rigid cloth			4	9 ..	..			7	
	elastic cloth		5	3 ..	..			7½	
Dalzo (347 Dalmas)									
zinc oxide plaster ¼ in × 1 yd			4	3 ..	..			6	
1 in × 1 yd			5	3 ..	..			7½	
½ in × 3½ yd			8	6 ..	..		1	0	
1 in × 3½ yd			13	6 ..	..		1	7	
¼ in × 5 yd			11	6 ..	..		1	4	
½ in × 5 yd			12	6 ..	..		1	5½	
¾ in × 5 yd			16	8 ..	..		1	11½	
1 in × 5 yd			19	0 ..	..		2	3	
1½ in × 5 yd			27	3 ..	..		3	2	
2 in × 5 yd			33	3 ..	..		3	10	
2½ in × 5 yd			41	9 ..	..		4	10	
3 in × 5 yd			47	0 ..	..		5	6	
4 in × 5 yd			61	6 ..	..		7	2	
½ in × 10 yd			18	0 ..	..		2	1	
½ in × 10 yd			20	8 ..	..		2	4½	
¾ in × 10 yd			28	6 ..	..		3	4	
1 in × 10 yd			32	0 ..	..		3	9	
1½ in × 10 yd			47	6 ..	..		5	6	
2 in × 10 yd			59	6 ..	..		7	0	
2½ in × 10 yd			73	0 ..	..		8	6	
3 in × 10 yd			83	4 ..	..		9	9	
4 in × 10 yd			104	0 ..	..		12	2	
zinc oxide adhesive felt									
4½ × 3 in thin			11	6 ..	..		1	4	
4 × 3 in medium	N.H.S.		11	6 ..	..		1	4	
3 × 3 in thick			11	6 ..	..		1	4	
6 × 6 in thin			23	0 ..	..		2	8	
6 × 4½ in medium			23	0 ..	..		2	8	
4½ × 4 in thick			23	0 ..	..		2	8	
Dalzoflex (347 Dalmas)									
elastic zinc oxide plaster									
½ in × 1 yd			7	0 ..	..			10	
1 in × 1 yd			11	3 ..	..		1	4	
2 in × 1 yd			17	6 ..	..		2	1	
2½ in × 1 yd			20	0 ..	..		2	4	
½ in × 3 yd			17	6 ..	..		2	1	
1 in × 3 yd			24	6 ..	..		2	10	
1½ in × 3 yd			31	0 ..	..		3	7	
2 in × 3 yd			40	8 ..	..		4	9	
2½ in × 3 yd			49	9 ..	..		5	9	
3 in × 3 yd			58	8 ..	..		6	10	
elastic adhesive bandage									
2 in × 3 yd			40	8 ..	..		4	9	
2½ in × 3 yd			49	9 ..	..		5	9	
3 in × 3 yd			58	8 ..	..		6	10	
4 in × 3 yd			76	9 ..	..		9	0	
Dapsodine (358 D&S) ..	12		231	0 ..	..		27	6	p1s4B
Daylight II (1027 Rank)									
projector			..	..	..		895	0	
fibre carrying case ..			..	..	..		102	6	
Day's (358 D&S)									
black drink ..	2½ oz		36	9	10	6	5	3	
Driffield oils ..	10 oz		64	9	18	6	9	3	
	20 oz		129	6	37	0	18	6	
etheric ammonia	.. 8 oz		56	0	16	0	8	0	
pessaries, cattle ..	12		189	0 ..	..		22	6	
sheep ..	12		168	0 ..	..		20	0	
white oils ..	10 oz		64	9	18	6	9	3	
	20 oz		129	6	37	0	18	6	
Decalex (814 M&B) *x* ray									
developer-replenisher	40 oz		200	0 ..	..		25	0	
	1 gal		720	0 ..	..		90	0	
Decaserpyl (1087 Roussel)									
tablets 5 mgm ..	500		190	0ea	..		285	0	
10 mgm ..	20		192	0 ..	..		24	0	
	100		76	8ea	..		115	0	
	500		350	0ea	..		525	0	
Declair (76 Atkinson) lotion			27	2	13	2	4	6	
Dentiline (430 Eucryl) ..			20	0	5	0	2	9	
refill			17	4	4	4	2	5	
Dermitab (182 BGP) ..			7	11ea		6ea	15	6	p1s4B
Di-Adreson-F (917 Organon)									
tablets 1 mgm ..	30		38	0 ..	..		4	9	TS
	100		108	0 ..	..		13	6	TS
	500		432	0 ..	..		54	0	TS
5 mgm ..	30		132	0 ..	..		16	6	TS
	100		390	0 ..	..		48	9	TS
	500		1860	0 ..	..		232	6	TS
Di-Adreson-F (917 Organon)									
tablets 1 mgm ..	30		3	2ea	..		4	9	TS
	100		9	0ea	..		13	6	TS
	500		36	0ea	..		54	0	TS
5 mgm ..	30		11	0ea	..		16	6	TS
	100		32	6ea	..		48	9	TS
	500		155	0ea	..		322	6	TS

Diamox (746 Lederle)									
vial	500 mgm		18	0ea	..		27	0	
tablets 250 mgm ..	25		12	8ea	..		19	0	
	100		42	4ea	..		63	6	
	1000		391	6ea	..		587	3	
Diotroxin (518 Glaxo)									
tablets 100 dp			36	0 ..	..		4	0	p1s4B
1000 dp			24	0ea	..		32	0	p1s4B
Distivit (378 DCBL)									
Delete B12 injection 50 mcgm/mil 5 mil vial									
Dorothy Gray (385 DG)									
● sun-tan lotion			57	0	29	0	9	6	
Dromoran (1074 Roche)									
tablets 1·5 mgm ..	20		36	0 ..	..		4	6	p1s1DD
E 39 (452 FBA)									
soluble ampoules 10 mgm	5		746	0 ..	..		93	3	
dry-substance capsules									
5 mgm	30		488	0 ..	..		66	0	
Elastoplast (1155 S&N)									
first aid dressings									
1¼ × ¾ in	100	11200	72	0 ..	..		8	6	
2¼ × ¾ in	100	11300	93	0 ..	..		10	9	
1¼ × 1½ in	100	11500	108	0 ..	..		12	6	
1¼ × 2½ in	100	11600	153	0 ..	..		17	9	
2 × 3 in	100	11700	225	0 ..	..		26	3	
waterproof									
1¼ × ¾ in	100	12200	72	0 ..	..		8	6	
2¼ × ¾ in	100	12300	93	0 ..	..		10	9	
1¼ × 1½ in	100	12500	108	0 ..	..		12	6	
1¼ × 2½ in	100	12600	153	0 ..	..		17	9	
2 × 3 in	100	12700	225	0 ..	..		26	3	
airstrip									
1½ × ⅞ in	100	14200	108	0 ..	..		12	6	
2½ × ⅞ in	100	14300	138	0 ..	..		16	0	
1½ × 1½ in	100	14500	159	0 ..	..		18	6	
1½ × 2½ in	100	14600	231	0 ..	..		27	0	
2 × 3 in	100	14700	339	0 ..	..		39	6	
A **Elastoweb** (1155 S&N)									
stretched 3 × 6/7 yd ..	3603		89	6 ..	..		10	6	
Elix. creosote-codeine co.									
(211 Butler) ..	16 oz		78	0 ..	..		9	9	
	80 oz		330	0 ..	..		41	3	
Elix. polyphosph. co.									
(211 Butler) ..	16 oz		36	0 ..	..		4	6	
Energen (421 Energen)	rolls	60	49	6 ..	..		5	0	
crispbread ..	6 oz		..	..	..		1	6	
Enseals (413 Lilly)									
Delete potassium thiocyanate 65 mgm (gr 1)									
Delete 250 mgm (gr 3)									
Ephpect-Forte (266 Clarnell)									
	4 oz		60	0	15	0	5	7	
Eyemakers a la Carte (1052 Revlon)									
eyebrow pencil propelling			72	0	36	0	12	6	
refills (3)			27	0	13	6	4	6	
eyebrow pencil short ..			36	0	18	0	6	0	
eyebrow brush ..			31	0	15	6	4	6	
eye lash tipping ..			129	0	64	6	21	6	
eye liner pencil ..			45	0	22	6	7	6	
frosted			57	0	28	6	9	6	
eye liner pencil sharpener			45	0	22	6	6	6	
eye liner liquid ..			63	0	31	6	10	6	
frosted			87	0	43	6	14	6	
brush			65	0	32	6	9	6	
eye shadow stick ..			51	0	25	6	8	6	
eye shadow pan ..			87	0	43	6	14	6	
gold, silver, gold bronze			105	0	52	6	17	6	
platinum, platinum/gold			147	0	73	6	24	6	
eye shadow brush ..			72	0	36	0	10	6	
mascara cake			45	0	22	6	7	6	
refills			30	0	15	0	5	0	
roll on			81	0	40	6	13	6	
refills			52	6	26	3	8	9	
frosted roll on ..			93	0	46	6	15	6	
remover pads			63	0	31	6	10	6	
Fennings (1100 JS)									
cooling powders children's	5		45 gross	0	11 gross	3		6	
little healers	12		60 gross	0	15 gross	0		8	
Delete tablets adults ..	30		..	..	..				
Ferrodic (34 A&H)									
tablets	100		54	0 ..	..		6	0	
Floid (900 Norton)									
after shave with tan ..			87	0	43	6	14	6	
Folvite (746 Lederle) elixir	4 oz		9	4ea	..		14	0	
solution 15 mgm/mil									
vial 10 mils			8	8ea	..		13	0	
tablets 5 mgm ..	100		9	2ea	..		13	9	
	1000		85	0ea	..		127	6	
Folvron (746 Lederle)									
capsules	100		13	0ea	..		19	6	
	1000		110	6ea	..		165	9	
elixir	16 oz		12	10ea	..		19	3	
tablets	100		13	0ea	..		19	6	
	1000		110	6ea	..		165	9	
Framycort (502 Genatosan)									
sterile eye and ear drops									
	5 mils		58	0 ..	..		7	3	TS
Framygen (502 Genatosan)									
sterile eye and ear drops									
	5 mils		45	0 ..	..		5	7	TS
Freezheat (191 BVF) Vax									
	16 oz	X16	57	0	7	0	6	11	
Delete	16 oz	V11, V12	..	..	..				
Fynnon (104 BP) salt ..			22	9	5	8½	2	11	
Gala (876 MP) "Bronze Touch" lotion ..			51	0	25	6	8	6	
Gev-e-tabs (584 H)									
16 days			96	7 ..	..		11	6	
32 days			180	7 ..	..		21	6	
Gevral (746 Lederle)									
capsules	30		11	4ea	2	10ea	19	10	

Gin Fizz (Lubin (1 Abbey))
soap box of 3 .. .. 102 0 25 6 **13 6**
talc 62 0 31 0 **10 3**
Glean (504 GP&B)
lens tissues .. .. 7 6 .. .. **6**
2 doz
Gluco-juice (430 Eucryl) 30 3 .. ..
Gluferate (1352 Wyeth)
tablets .. .. 250 128 0 .. .. **14 3**
Glumorin (452 FBA)
tablets 30 bu .. .. 20 130 0 .. .. **16 3**
R **Glycinal** (830 Medo) tablets 50 56 0 .. .. **7 0**
250 18 6ea .. **27 9**
Goya (532 Goya)
gold metal compact .. 51 0 25 6 **8 6**
pearl and gold cocktail compact 27 0 13 6 **4 6**
Gualime (940 PK) .. 28 9 .. .. **3 0**
Guavin (940 PK) .. 28 9 .. .. **3 0**
Guavo (940 PK) .. 28 9 .. .. **3 0**
Gynomin (276 C&C) tablets 12 31 6 .. .. **3 6**
Hanovia (1373 Hanovia)
prescription lamps
model 4 UV only **440 0**
6 UV and IR **500 0**
7 UV and IR **540 0**
Hansons (202 Bryten)
catarrh compound .. 12 6 3 1 **2 0**
adult cough balsam .. 13 6 3 4 **2 3**
● **H.E.** (1063 Rimmel) His Excellency
aerated shaving lather 44 8 11 2 **6 6**
after bath body rub .. 39 0 19 6 **6 6**
body talcum .. 33 0 16 6 **5 6**
after shave lotion .. 27 0 13 6 **4 6**
anti-dandruff shampoo 37 8 9 5 **5 6**
anti-perspirant and
deodorant spray .. 33 0 16 6 **5 6**
pre-electric shave lotion 33 0 8 3 **5 6**
tonic hair dressing .. 33 0 16 6 **5 6**
Hetrazan (746 Lederle)
tablets 50 mgm .. 100 10 0ea .. **15 0**
1000 83 6ea .. **125 3**
Hibitane (649 ICI)
antiseptic lozenges .. 250 192 0 .. ..
Houseproud (942 Passmill)
extra soft toilet tissue 7 8 .. .. **1 3**
Heparin (147 Boots) injection B.P.
1,000 i.u./mil vial 5 mils 34 0 .. .. **4 3**
5,000 i.u./mil vial 5 mils 120 0 .. .. **15 0**
25,000 i.u./mil vial 5 mils 540 0 .. .. **67 6**
powder 20,000 i.u. 1 lb. 122 0 .. .. **15 3**
100,000 i.u. 516 0 .. .. **64 6**
Huskolein (358 D&S) 20 oz 140 0 40 0 **20 0**
1 gall 665 0 190 0 **95 0**
Hydrothide (830 Medo) .. 25 5 9ea .. **8 7½**
100 21 4ea .. **32 0**
250 52 0ea .. **78 0**
Inecto (1028 Rapidol)
hair colour creme for men 40 0 20 0 **6 8**
Iron-Ox (800 TM)
tonic tablets 50 17 0 4 3 **2 3**
140 36 0 9 0 **4 9**
250 58 8 14 8 **7 9**
R **Ismelin** (262 CIBA)
tablets 10 mgm .. 25 8 8ea .. **13 0**
100 32 4ea .. **48 6**
500 157 4ea .. **236 0**
25 mgm .. 25 20 0ea .. **30 0**
100 76 4ea .. **114 6**
500 376 8ea .. **565 0**
I-So-Gel (34 A&H) 150 gm .. .. ..
200 gm .. .. ..
Delete 300 gm 56 0 14 0 **7 0**
Delete **Jadit** (614 Hoechst)
distributors 621 Horlicks)
ointment .. 20 gm 28 0 6 10 **4 1**
solution .. 30 mils 52 0 12 8 **7 7**
powder .. 40 gm 52 0 12 8 **7 7**
Jadit 'H' (614 Hoechst)
(distributors 621 Horlicks)
ointment .. 5 gm 70 0 17 1 **10 2** TS
solution .. 6 mils 96 0 23 5 **13 11½**TS
Kent (693 Kent) brushes
shaving 90% badger,
10% bristle .. K52 34 5ea 8 4ea **60 0**
tooth, badger .. KB42 39 4 .. .. **4 11**
Kleinerts (706 Kleinerts) baby pants
Frolic 2183 .. .. 40 0 .. .. **4 11**
extra large .. .. 44 0 .. .. **5 6**
Kolynos (655 ICC)
super white dental cream 13 10 3 6 **1 10**
denture powder 13 3 3 4 **1 9**
20 8 5 2 **2 9**
Ledercort (746 Lederle)
tablets ¼ mgm .. 30 37 6ea .. **56 3** TS
100 120 0ea .. **180 0** TS
500 550 0ea .. **825 0** TS
2 mgm .. 30 21 0ea .. **31 6** TS
100 60 0ea .. **90 0** TS
500 279 0ea .. **418 6** TS
acetonide cream 0·1% 5 gm 4 2ea .. **6 3** TS
15 gm 10 4ea .. **15 6** TS
ointment 0·1% 5 gm 4 2ea .. **6 3** TS
15 gm 10 4ea .. **15 6** TS
Lederkyn (746 Lederle)
suspension .. .. 2 oz 8 0ea .. **12 0** p1s4B
16 oz 56 8ea .. **85 0** p1s4B
tablets .. .. .. 24 15 8ea .. **23 6** p1s4B
100 58 8ea .. **88 0** p1s4B
500 276 4ea .. **414 6** p1s4B
Lederplex (746 Lederle)
capsules .. .. 100 14 6ea .. **21 9**
500 62 10ea .. **94 3**

liquid .. .. .. 4 oz 7 0ea .. **10 6**
8 oz 11 10ea .. **17 9**
12 oz 16 6ea .. **24 9**
tablets .. .. .. 100 14 6ea .. **21 9**
1000 123 8ea .. **185 6**
Leichner (749 Leichner)
blending powder
standard 116 25 0 12 6 **4 2**
large 118 36 0 18 0 **6 0**
blood, liquid .. bottle 702 36 0 18 0 **6 0**
congealed .. jar 701 30 0 15 0 **5 0**
carmine 52 24 0 12 0 **4 0**
casualty putty .. 700 28 0 .. .. **3 6**
clown white .. tins 55 30 0 15 0 **5 0**
eau de lys liquid powder 62 30 0 15 0 **5 0**
gold and silver .. 62 72 0 36 0 **12 0**
eye cosmetic & brush 60b 28 0 14 0 **4 8**
block only 60a 16 0 8 0 **2 8**
fluorescent u.v. make-
up 106 60 0 30 0 **10 0**
greasepaint 105 96 0 48 0 **16 0**
form C—standard sticks 12 0 6 0 **2 0**
gold and silver .. 21 0 10 6 **3 6**
form E—short blunt
liners 9 0 4 6 **1 6**
form G—short liners 9 0 4 6 **1 6**
form H—carmine liners 12 0 6 0 **2 0**
heating cosmetic .. 486 24 0 12 0 **4 0**
silver and gold .. 486 28 0 14 0 **4 8**
hair powder 121 21 0 10 6 **3 6**
"Kamera Klear" cinema
make-up 501 28 0 14 0 **4 8**
negro black 1433 18 0 9 0 **3 0**
nose putty .. .. 257 14 0 .. .. **1 9**
"Spot-Lite" "Klear"
make-up 500 28 0 14 0 **4 8**
gold and silver .. 66 0 33 0 **11 0**
finishing powder .. 300 30 0 15 0 **5 0**
large 301 45 0 22 6 **7 6**
pencil in wood .. 46/2 10 0 5 0 **1 8**
46 16 0 8 0 **2 8**
pencil in paper .. 78 10 0 5 0 **1 8**
spirit gum mastic .. 165 30 0 .. .. **3 9**
substitute .. ..1065 14 0 .. .. **1 9**
"Tan Klear" 641 24 0 12 0 **4 0**
640 36 0 18 0 **6 0**
tinsel powder 123 20 0 10 0 **3 4**
tooth enamel, black .. 433 24 0 .. .. **3 0**
white, ivory .. 433 24 0 12 0 **4 0**
Lestreflex (347 Dalmas) elastic diachylon bandage
3 in × 3 yd 58 8 .. .. **6 10**
4 in × 3 yd 76 9 .. .. **9 0**
Leucovorin (746 Lederle)
ampoules 3 mgm/mil .. 6 31 2ea .. **46 9**
● **Librium** (1074 Roche)
capsules 10 mgm .. 25 68 0 17 0 **9 11**
100 240 0 60 0 **35 0**
500 984 0 246 0 **143 6**
● **Linc-o-lin** (763 Lincoln)
universal hair treatment 16 0 8 0 **2 9**
Linct. rosae (211 Butler) 16 oz 48 0 .. .. **6 0**
80 oz 192 0 .. .. **24 0**
Liq. aurant. dulc. conc. (211 Butler)
16 oz 78 0 .. .. **9 9**
40 oz 180 0 .. .. **22 6**
Delete 80 oz .. ..
Liq. nitritam (211 Butler) 16 oz 36 0 .. .. **4 6**
40 oz 80 0 .. .. **10 0**
Delete 80 oz .. ..
Liver injection USP (746 Lederle)
B12—20 mcgm/cc, vial 3 7 0ea .. **10 6**
Lusty's (781 Lusty's)
seaweed bath .. 5 bags 22 0 5 3 **3 2**
tablets 50 14 6 3 6 **2 1**
150 33 0 7 10 **4 9**
Lydrin (211 Butler) 16 oz 120 0 .. .. **15 0**
Lysinex (769 Lloyd Hamol)
tablets .. .. .. 25 12 0ea .. **18 0**
100 38 0ea .. **57 0**
Lystone (655 ICC) salts .. 22 8 5 8 **3 0**
Makeur (89 Bairant)
cosmetic applicator
dressing table model **147 0**
travelling model **126 0**
Margo's (798 Margolis)
● talcum bouquet of flowers 16 8 8 4 **2 11**
lanolin hand cream 6 6 3 3 **1 3**
Delete Marienbad (1303 Wander) tablets
Marsilid (1074 Roche)
tablets 25 mgm .. 50 68 0 .. .. **8 6** TS
250 280 0 .. .. **35 0** TS
50 mgm .. 100 220 0 .. .. **27 6** TS
1000 1760 0 .. .. **220 0** TS
Maw's (810 Maw)
baby teat three hole .. 5 9 .. .. **8**
Max Factor (813 MF)
roll-on deodorant .. 34 8 17 0 **5 9**
R **Melleril** (1098 Sandoz)
tablets 10 mgm .. 50 40 0 .. .. **5 0**
250 180 0 .. .. **22 6**
25 mgm .. 50 66 0 .. .. **8 3**
250 300 0 .. .. **37 6**
50 mgm .. 50 126 0 .. .. **15 9**
250 570 0 .. .. **71 3**
100 mgm .. 50 240 0 .. .. **30 0**
250 1080 0 .. .. **135 0**
Melolin (155 S&N) dressings
10 × 20 cm .. .. 50 11 6ea .. **16 3**
20 × 30 cm .. .. 50 30 9ea .. **43 3**
10 × 10 cm .. .. 100 12 0ea .. **17 0**
Mephine (1352 Wyeth)
injection ampoule 1 mil 29 0 .. .. **3 3**

multi-dose vial 10 mils 89 0 .. .. 9 11
tablets .. .. .. 20 27 0 .. .. 3 0
250 146 0 .. .. 16 3
Mist. bismuth co. (211 Butler)
16 oz 108 0 .. .. 13 6
80 oz 480 0 .. .. 60 0
Monophen (645 Ilford) 500 cc 70 0 .. .. 8 9
Morny (862 Morny)
perfume "Luxury Mist" 144 .. .. .. 15 0
Delete perfume large flask .. 136
Delete skin perfume 190
Delete skin perfume 191
skin perfume .. .. 195 .. .. .. 5 6
talcum plastic .. .. 605 .. .. .. 7 6
refill .. .. .. 606 .. .. .. 3 6
Mysteclin V (1176 Squib)
capsules, 250 mgm .. 500 882 4ea .. 1323 6
● **Napisan** (1398 GC) .. 20 0 .. .. 2 6
R **Narphen** (1154 S&N) ampoules
2 mgm/mil .. .. 10 15 0ea .. 22 6 DD
100 120 0ea .. 180 0 DD
Neothyl (787 Macfarlan)
100 gm 4 0ea ..
500 gm 16 0ea ..
Nethapryn (838 MN)
linctus .. .. .. 4 oz 60 0 15 0 8 9
Night Tan (1397 Ellanby) 12 6ca 6 3ea 25 0
Nivea (1155 S&N)
Delete 365 15 9 7 10½ 2 7
Nurse Harvey's (578 Harvey)
baby powder squeeze pack 26 0 6 6 3 6
mixture 17 0 4 3 2 3
Oestradin (901 Norton) .. .. †s1s4A
Oil of the Night (358 D&S)
(home) .. .. 2½ oz 26 3 7 6 3 9
5 oz 35 0 10 0 5 0
10 oz 60 8 17 4 8 8
30 oz 157 6 45 0 22 5
vet .. 10 oz 68 10 19 8 9 10
30 oz 157 6 45 0 22 5
Delete Overones (120 BGP)
Overones (182 BGP) .. 7 10½ea 6½ea 15 6 p1s4B
Parentrovite (1285 Vitamins) ampoules, pairs intramuscular high potency 3 96 0 .. .. 12 0
Pasinah-302 (1303 Wander)
180 41 0ea .. 61 6 TS
● 540 114 8ea .. 172 0 TS
Payot, Dr (870 MV)
fard satin 432.71 6 3ea 3 1½ea 12 0
deodorant 856.71 6 5½ea 2 11½ea 12 4
Penidural (1352 Wyeth)
tablets .. .. .. 20 106 0 .. .. 11 10 TS
100 474 0 .. .. 52 8 TS
sulphas tablets .. 20 120 0 .. .. 13 4†s4B TS
100 540 0 .. .. 60 0†s4B TS
Pentothal (2 Abbott)
Delete 1.0 gm with 50 mils water 1 .. .. ..
1.0 gm with 40 mils water 1 4 2ea .. 6 3†s1s4A
Personality (963 PBP) turtle oil
deep cleansing cream 14/37 39 0 19 0 6 3
complexion milk 14/17 10 3 5 0 1 8
foundation cream .. 47 6 23 2 7 9
Delete Phrosidine (120 BGP)
Phrosidine (182 BGP) tablets 31 10ea 1 8ea 50 0 p1s4B
Phrosidine forte (182 BGP)
tablets 39 9ea 2 3ea 60 0 p1s4B
Pleniron (695 TK) tablets 100 4 2ea 1 1ea
1000 38 0ea 9 6ea
Plesmet (276 C&C)
tablets .. .. ..1000 240 0 .. .. 30 0
Predsol (518 Glaxo)
injection 1 mil single 10 6ea .. 14 0 TS
6 50 0ea .. 66 8 TS
Preludin (969 Pfizer)
Tablonget 50 mgm .. 100 30 0ea .. 45 0p1s4B
Proctosedyl (1087 Roussel)
● ointment 15 gm .. 144 0 .. .. 18 0 TS
Proladone (324 Crookes)
1 mil 6 90 0 .. .. 10 0p1s1DD
50 666 0 .. .. 74 0p1s1DD
Prostalin (182 BGP) .. 6 0½ea 6½ea 13 0
Prostigmin (1074 Roche)
ophthalmic solution 3%
7·5 mils 60 0 .. .. 7 6
Pularin (436 Evans)
1000 iu per mil 5 mils 34 0 .. .. 4 3
5000 iu per mil 5 mils 120 0 .. .. 15 0
12500 iu per mil 1 mil 86 0 .. .. 10 9
25000 iu per mil 5 mils 45 0ea .. 67 6
freeze dried pdr. 100000 iu 43 0ea .. 64 6
Radiol (1023 Radiol) worm powder
S (Strongyles) .. 3 oz 45 0 .. .. 5 0
Rayhita (1277 VI) .. 30 10 7 8½ 4 6
● **Reconciliation** (1032 Raymond)
perfume 150 0 75 0 25 0
Resochin (452 FBA)
tablets .. .. .. 100 176 0 .. .. 22 0
Resotren (452 FBA)
tablets 300 1472 0 368 0 214 8 p1
Reudel (655 ICC) bath salts 15 2 3 10 2 0
Revicaps (746 Lederle) .. 100 16 10ea 4 3ea 29 6 p1s4B
Revitone (1074 Roche)
syrup .. .. .. 6 oz 24 0 6 0 3 6 p1
dp 80 oz 216 0 .. .. 27 0 p1
Rikospray (1061 Riker)
silicone 15 4ea 3 10ea 23 0
benzocaine .. .. 12 0ea .. 18 0
Ro-A-Vit (1074 Roche)
tablets 50,000 iu .. 30 84 0 .. .. 10 6
200 480 0 .. .. 60 0
drops 150,000 iu mil 7·5 mils 68 0 .. .. 8 6

Roberts Windsor (1070 Windsor)
soap luxury size ..1106 11 7 2 9 1 6
Roccal (97 Bayer)
antiseptic .. 6 oz 17 4 .. .. 2 2
16 oz 38 0 .. .. 4 9
80 oz 135 0 .. .. 15 9
Delete tincture .. 6 oz .. .. ..
80 oz .. .. ..
Romilar (1074 Roche)
syrup, 15 mgm/5 mils
100 mils 48 0 .. .. 6 0 p1
500 mils 220 0 .. .. 27 6 p1
tablets, 15 mgm .. 20 36 0 .. .. 4 6 p1s1
100 144 0 .. .. 18 0 p1s1
200 264 0 .. .. 33 0 p1s1
expectorans, syrup 100 mils 48 0 .. .. 6 0 p1
500 mils 220 0 .. .. 27 6 p1
Delete Sedaltine (70 Aspro)
tablets 100
250
Serpasil-Esidrex (262 CIBA)
tablets .. .. .. 25 64 0 .. .. 8 0 p1s4B
100 224 0 .. .. 28 0 p1s4B
500 88 8ea .. 133 0 p1s4B
Delete Sonmased (394 Duncan)
tablets 100
500
Somnifaine (1074 Roche)
ampoules, 2 mils .. 6 53 4 .. .. 6 8†s1s4A
Spa (1167 Spa) brushes
hair, ladies' nylon styling
featherweight .. 24 0 6 0 3 6
Sparine (1352 Wyeth)
tablets 25 mgm .. 50 66 7 .. .. 7 5 p1s4B
250 308 0 .. .. 34 3 p1s4B
50 mgm .. 50 127 8 .. .. 14 3 p1s4B
250 580 11 .. .. 64 7 p1s4B
100 mgm .. 50 240 6 .. .. 26 9 p1s4B
250 1137 9 .. .. 126 5 p1s4B
injection 2 mils .. 10 122 0 .. .. 13 7 p1s4B
Delete S.P.H.P. (120 BGP)
S.P.H.P. (182 BGP) .. 11 3ea 10ea 23 6
Sportsman (645 Ilford)
colour filters 154 0 38 0 22 5
Spray Net (24 Akos)
● aerosol hair lacquer .. 6 oz 48 0 24 0 8 0
R 16 oz 102 0 51 0 18 0
Spray Set (532 Goya) .. 51 0 25 6 8 6
Sulphadiazine (746 Lederle)
tablets BP 0·5 gm .. 100 10 0ea .. 15 0 p1s4B
500 48 4ea .. 72 6 p1s4B
1000 96 8ea .. 145 0 p1s4B
Stratton (735 Laughton)
● compact Thinette 25 6
Sulphamagna (1352 Wyeth)
4 oz 100 0 25 0 13 3†s4BTS
Surfadil (413 Lilly)
cream .. .. 28 gm 36 0 .. .. 4 6
Tabac (963 PBP)
deodorant spray 14/48 51 8 25 2 8 6
Cologne .. 14/49 48 4 23 7 7 11
shave cream lather 14/50 38 11 9 6 5 6
brushless 14/51 38 11 9 6 5 6
pre-electric shave
lotion .. 14/52 47 0 22 11 7 9
Tan-Glo (312 AC)
suntan creme .. 30 gm 11 6 5 9 2 6
Taumasthman (1301 WM)
tablets .. .. .. 60 73 0 .. .. p1
250 234 0 .. .. p1
T.B.P. (174 BA)
hair and scalp treatment 15 9 3 10 2 1
27 0 6 7 3 6½
Tercin (179 BDH)
tablets .. .. .. 200 66 0 .. .. 8 3†s1s4A
1000 306 0 .. .. 38 3†s1s4A
Teropterin (746 Lederle) solution
10 mgm/mil 10 vial mils 42 2ea .. 63 3
Terpacol (195 Brook Parker)
4 oz 40 0 .. .. p1
8 oz 70 0 .. .. p1
16 oz 126 0 .. .. p1
80 oz 50 0ea .. p1
Tersavid (1074 Roche)
tablets 50 mgm .. 50 88 0 22 0 12 10
250 336 0 84 0 49 0
Delete Testrones-Dermitab (120 BGP)
Testrones (182 BGP) .. 7 11ea 6ea 15 6
Thephorin (1074 Roche)
tablets 25 mgm ..1000 864 0 .. .. 108 0 p1s7
Tokalon (1240 Tokalon)
hand cream 8 1 4 0½ 1 3
13 1 6 6 2 0
Tranquilex (1053 Rexall) 40 48 0 .. .. 5 9 p1s4B
120 125 0 .. .. 15 0 p1s4B
Trust (671 Jeyes)
toilet roll .. .. 12 4 .. .. 1 4
Tumeson (614 Hoechst) (distributors 621 Horlicks)
ointment .. 5 gm 40 0 9 9 5 10
20 gm 128 0 31 2 18 7
● **Turn Tan** (1053 Rexall) 75 0 37 6 12 6
Tussinf (195 Brook Parker) 4 oz 25 0 .. .. p1
8 oz 39 0 .. .. p1
16 oz 66 0 .. .. p1
80 oz 24 0ea .. p1
Tylenol (1383 McNeil)
elixir .. .. .. 4 oz 56 0 .. .. 7 0
Tyordac (346 Dales)
pastilles .. .. 100 10 6ea ..
250 24 6ea ..

	Valtorin (969 Pfizer)								
	tablets	6	16	0	..	..	2	0	
		12	30	0	..	..	3	9	
		dp100	180	0	..	..	22	6	
		dp300	480	0	..	..	60	0	
	Varidase (746 Lederle)								
	buccal tablets ..	12	21	8ea		..	32	6	TS
	Vasogen (720 Lactogol)								
	silicone ..	50 gm	46	3	11	7	6	6	
	Veractil (814 M&B)								
	tablets 5 mgm ..	50	36	0	..	..	4	6	p1s4B
		500	300	0	..	..	37	6	p1s4B
	25 mgm ..	50	110	0	..	..	13	9	p1s4B
		500	980	0	..	..	122	6	p1s4B
	100 mgm ..	50	380	0	..	..	47	6	p1s4B
		500	3340	0	..	..	430	0	p1s4B
	ampoules 2·5% 1 mil	10	100	0	..	..	12	6	p1s4B
Delete	Virules (120 BGP)								
	Virules (182 BGP) ..		10	10ea		8ea	21	0	
	Vita-E (127 Bioglan)								
	gels 800 iu	100	260	0ea		..	390	0	
	Viules (147 Boots)								
	Hydrocortistab								
	25 mgm/1 mil ..	6	8	3ea		..	11	0	TS
	50 mgm/2 mils ..	6	16	6ea		..	22	0	TS
	morphine sulphate gr ½/mil	6	42	0	..	..	5	3	s1DD
	heparin,								
	25000 IU/mil	single	120	0	..	..	15	0	
A	**Warricks** (1311 Warrick) linseed, liquorice and chloro-								
	dyne lozenges ..	2 oz	7	6	..	..		11	
	Wellcome (208 BW)								
	aminophylline BP intramuscular								
	0·5 gm in 2 cc	5	33	9	..	..	3	9	
Delete	pack of	6	..	..	..				
	Woodwards (1346 Woodward)								
	gripe water		17	8	4	3	2	3	
	Wycvin (1352 Wyeth)								
	tablets	50	54	0	..	..	6	0	
	with phenobarbitone	50	63	0	..	..	7	0	†s1s4A
	Yardley (1355 Yardley)								
	hair tonic for men	2231	36	0	18	0	6	0	
	eau de cologne for men	2029	97	0	48	6	16	2	
	after shave lotion	2059	58	0	29	0	9	8	
	Florentine lipstick case		45	0	22	6	7	6	
Delete	lipstick	69	..	..		..			
	Yaxa (261 Christy)								
	deodorant stick ..		19	6	9	9	3	3	
	mini-fragrance ..		75	0	37	6	12	6	
	roll-on		27	0	13	6	4	6	
	refills		21	0	10	6	3	6	

ADDITIONS TO KEY TO SUPPLIERS:

(76 Atkinson) = J. & E. ATKINSON, LTD., 24 Old Bond Street, London, W.1. Hyde Park 7353.
(89 Bairant) = BAIRANT, LTD., 186 Campden Hill Road, London, W.8. Park 7781.
(100 Beaucaire) = BEAUCAIRE LABORATORIES, Bridson Street, London, S.E.15. New Cross 7144.
Delete (120 BCP).
(120 BGP) = B.G.P. COSMETICS, LTD., 37 Chesham Place, London, S.W.1. Belgravia 5679.
(182 BGP) = BRITISH GLANDULAR PRODUCTS, LTD., 37 Chesham Place, London, S.W.1. Belgravia 5641.
(477 AF & B) = ALFRED FRANKS & BARTLETT CO., LTD., 226 Grays Inn Road, London, W.C.1. Terminus 9865.
Delete (491 Gevaert).
(491 GB) = GALE BAISS & CO., LTD., 274 Ilderton Street, London, S.E.15. New Cross 0094.
(581 Haynor) = HAYNOR, LTD., 167 Greyhound Road, London, W.6. Fulham 4343.
(614 Hoechst) = HOECHST PHARMACEUTICALS, LTD., Slough, Bucks. Slough 22322.
(900 Norton) = M & R NORTON, LTD., 9 Park Hill, London, S.W.4. Macaulay 2355.
Delete (1004 Price).
(905 Nufoam) = NUFOAM PLASTICS LTD., 113 Clarendon Road, London, W.11. Bayswater 4123.
(1004 Price) = A. S. PRICE & CO., LTD., Park Street, Blackheath, Birmingham. Blackheath 2251.
(1063 Rimmel) = RIMMEL LTD., 146 New Bond Street, London, W.1. Grosvenor 2062.
(1121 Searle) = G. D. SEARLE & CO., LTD., Lane End Road, High Wycombe, Bucks. High Wycombe 1770.
Delete (1215 Teasdale).
(1215 Teasdale) = TEASDALE & CO., LTD., P.O. Box 15, South Vale Works, Carlisle. Carlisle 26262.
(1320 WP) = WEST PHARMACEUTICAL CO., LTD., 9 Palmeira Mansions, Church Road, Hove, 3, Sussex. Hove 772215.
(1373 Hanovia) = ENGELHARD HANOVIA, LTD., Slough, Bucks. Burnham 500.
Delete (1383 McNeil).
(1383 McNeil) = MCNEIL LABORATORIES, LTD., High Wycombe, Bucks. Naphill 2264.
(1393 BRL) = BEECHAM RESEARCH LABORATORIES LTD., Great West Road, Brentford, Middlesex. Isleworth 4111.
(1397 Ellanby) = ELLANBY LABORATORIES, LTD., 146 Holborn, London, E.C.1. Chancery 9664.
(1398 GC) = GASCOIGNE-CROWTHER LTD., Lactosan Laboratories, Caversham, Reading.

COMING EVENTS

Monday, June 27

FINCHLEY and NORTH METROPOLITAN BRANCHES, PHARMACEUTICAL SOCIETY, "Plough," Crews Hill, Enfield, Middlesex, at 8 p.m. Darts match.

Wednesday, June 29

LONDON SECTION, ROYAL INSTITUTE OF CHEMISTRY, Imperial Chemical Industries, Ltd., Plastics division, Black Fan Road, Welwyn Garden City, Herts, at 2.30 p.m. Visit.

MANCHESTER PHARMACEUTICAL GOLEING SOCIETY, Buxton High Peak Golf Club. Competition for Kerfoot trophy and prize.

WOKING BRANCH, PHARMACEUTICAL SOCIETY, Horlicks, Ltd., Slough, Bucks. Visit.

Thursday, June 30

SOUTH-EAST LONDON CHEMISTS' ASSOCIATION, Givaudan, Ltd., Whyteleafe, Surrey. Visit.

TELEVISION

Figures in the columns represent number of appearances of the product during the week.

July 3–9	London	Midland	North	Scotland	Wales	South	N.E.	Anglia	Ulster
Alka-Seltzer ..	2	2	3	3	3	3	3	3	4
Anadin	—	2	—	8	6	1	—	5	—
André Philippe bubble-bath ..	1	—	—	—	—	—	—	—	—
Andrex	3	—	—	—	—	—	—	—	—
Askit	—	—	—	12	—	—	—	—	7
Aspro	1	—	—	—	15	—	—	—	—
Beecham's pills ..	2	2	1	2	2	3	2	1	1
powders	—	2	2	2	2	2	2	2	3
Benbows dog mixture	—	—	—	—	—	3	—	—	—
Biladin	—	—	—	—	—	—	5	—	—
Bisodol	3	3	1	4	—	6	6	—	—
Bristow's lanolin shampoo	—	—	—	—	—	1	—	—	—
Coldrex	1	3	4	2	—	3	2	3	—
Cuticura	2	2	—	—	—	—	—	—	—
Delsey	—	3	5	—	—	—	—	—	4
Dextrosol tablets ..	3	3	—	—	—	3	—	—	—
Elliman foot cream	—	2	—	—	—	—	—	—	—
Eno's Fruit Salt ..	4	2	2	3	2	3	—	2	3
Euthymol tooth-paste	—	—	—	—	—	—	—	1	—
Flit aerosols ..	5	5	6	4	5	4	5	4	4
Focus	1	2	2	1	3	2	2	2	2
Fynnon salt ..	1	1	2	1	1	1	1	—	1
Germolene	3	4	3	—	4	—	—	—	1
Halex	1	3	4	4	3	4	4	3	4
Ingram shaving cream	1	3	3	3	3	3	2	2	—
Kathleen Court ..	1	—	2	—	—	—	—	—	—
Kleenex	3	3	3	2	2	2	2	2	3
Klik	—	5	—	—	6	—	—	—	—
Kodak	1	3	3	5	4	3	3	4	—
Loxene hair cream ..	1	3	3	2	3	2	3	4	3
shampoo	1	3	2	2	3	2	2	2	3
Macleans tooth-paste	2	3	3	3	4	3	3	2	—
Mix-A-Shake ..	—	3	—	—	—	—	—	—	—
Mum rollette ..	3	3	2	3	3	2	2	3	3
Pepsodent tooth-paste	1	2	3	3	3	2	3	3	3
Phyllosan	—	—	—	—	1	1	1	1	1
Prom	2	4	4	4	5	3	4	4	4
Rennies	1	1	—	1	2	1	1	2	3
Rinstead pastilles ..	1	1	1	1	1	1	1	1	1
Rivella	1	—	—	—	—	—	—	—	—
Ronson shavers ..	1	2	2	1	2	1	1	2	1
Saxin	4	4	4	4	—	4	4	4	4
ScotTowels	3	—	—	—	—	—	—	—	—
Sek	1	1	1	2	1	1	1	1	2
Setlers	2	2	2	—	2	2	2	—	—
Sparkleen	—	—	—	—	—	—	3	—	—
Toni	2	2	3	4	3	2	3	3	3
Twink	4	4	4	4	4	4	4	4	4
Winspray products .	—	4	—	—	—	1	—	—	—
Yeast-vite	2	2	2	2	2	3	1	3	5
Zoflora	1	—	—	1	—	—	—	—	—

PATENTS

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COMPLETE SPECIFICATIONS ACCEPTED
From the "Official Journal (Patents)," June 15

6-nitro-2-dichloroacetylamino-benzothiazole, a process for its production and pharmaceutical preparations containing it. Recip, A.B. 844,241.

Substituted 3, 5-diketopyrazolidines. Sandoz, Ltd. 843,688.

Adrenocorticotropic action-retarding and anti-enzymatic aromatic poly-phosphates. Leo, A.B. 843,820.

Pimaricin and process of producing same. Koninklijke Nederlandsche Gist-& Spiritusfabriek, N.V. 844,289.

Preparation of organic phosphorus compounds. Murphy Chemical Co., Ltd. 844,402.

Preservative composition and process for the use thereof. Monsanto Chemical Co. 843,839.

Compositions for combating rodents. Farbenfabriken Bayer, A.G. 844,037.

British patent specifications are obtainable (price 3s. 6d. each) from the Patent Office, 23 Southampton Buildings, Chancery Lane, London, W.C.2.

TRADE MARKS

APPLICATIONS ADVERTISED BEFORE REGISTRATION

From the "Trade Marks Journal," May 25

For all goods (3)
SHERPOL, 801,168, by Sherwoods Paints, Ltd., Barking, Essex.

For detergents for laundry and domestic cleaning purposes (3)
Device with word STILOX, 791,678, by United Suppliers Co., Ltd., London, S.E.1.

For pharmaceutical preparations and substances for use in dental treatment (5)
DENTINOX, 792,874, by Dentinox Gesellschaft für Pharmazeutische Praparate Lenk and Schuppan, Berlin-Steglitz, Germany.

For all goods (5)
ADWEY, 795,008, by Larsons Produkte, A.G. Glarus, Switzerland. SMARTIES, B797,003, by Rowntree & Co., Ltd., York. GARINOR, 798,102, by Roche Products, Ltd., Welwyn Garden City, Herts. IROLATE, 800,885, by Parke, Davis & Co., Detroit, Michigan, U.S.A., and Staines Road, Hounslow, Middlesex.

For all goods, but not including medicated wines or toilet paper or any goods of the same description as toilet paper (5)
POLO, 796,162, by Rowntree & Co., Ltd., York.

For pharmaceutical preparations in tablet form for the treatment of migraine (5)
VALGRAINE, 797,062, by Distillers Co. (Biochemicals), Ltd., Speke, Liverpool.

For anæsthetics (5)
FABACAIN, 798,634, by Farbenfabriken Bayer, A.G., Leverkusen, Germany.

For cough linctus (5)
BROLINCTUS, 798,645, by Chas. H. Phillips Chemical Co., Ltd., London, W.3.

For pharmaceutical preparations (5)
CARCAL, 799,394, by Deroid, Ltd., Rugby,